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VIRAL INFECTIONS OF RESPIRATORY TRACT

Their Treatment and Prevention

HOBART A. REIMANN, M.D.
Philadelphia

This discussion deals with acute, self-limiting, chiefly airborne diseases of known or presumed viral origin affecting predominantly the respiratory tract, ordinarily called colds, grip or influenza, and with certain newly delineated ones. There is hardly any need to recall the prevalence of the diseases in question or how little can be done for their prevention and cure. They account for most of the home visits (32 per cent) and provide the second most common reason (15 per cent) for office visits to general practitioners.[1] The average person is said to suffer from one to four bouts each year, accounting for about two hundred and fifty million infections annually in the United States.[2] Infections of the respiratory tract cause more loss of time from industry and from schools than all other diseases combined. They are rarely a direct cause of death, but they precede or incite many other serious infections, notably the bacterial pneumonias, subacute bacterial endocarditis, septicemia, purulent diseases of the accessory nasal sinuses and meningitis, and frequently precipitate the symptoms of peptic ulcer, coronary occlusion and other diverse diseases.

EPIDEMIOLOGY

In general, the epidemiology of component members of this group of diseases is similar. The causative agents are harbored in patients and in asymptomatic carriers who serve as migratory sources of infection. As the Wells have shown, secretions expelled as visible droplets by talking, sneezing or coughing are not so important in disseminating viruses from these sources as the minute, invisible, exhaled particles which float about in air like tobacco smoke. Other means of transfer undoubtedly exist also. Persons who inhale infectious agents suspended in air or acquire them otherwise react in different ways. Those who are immune or who are resistant by reason of an intact mucous membrane or other factors escape disease; those who are susceptible become infected. Epidemics are most common and most widespread in winter, but they occur in all seasons and in all climates (the Thomsons,[3] Smillie [2] and Hilding [4]). It is not known where the causative agents reside between epidemics, but viruses presumably are perpetuated by passage from person to person by a continuous chain of sporadic attacks or reside perennially in certain healthy carriers.[5] The incubation period and probably the carrier state are usually brief.

Little is known concerning specific immunity except in influenza. Immunity is believed not to last beyond several weeks or months after an attack.[6] Certain persons seem never to be attacked, while many have repeated bouts in a season. General resistance is thought to be afforded by good nutrition and health; yet robust persons in apparently excellent health contract infections. Local resistance appears to be largely dependent on an intact mucous membrane with its normal coating of mucus kept in motion by gravity and ciliary and muscular activity.[7] Lysozymes may also play a role. There is indirect evidence that chilling the surface of the body causes a reflex vasoconstriction and a fall of temperature of the mucous membrane favoring the invasion of viruses.[8] Mucosal irritants undoubtedly favor invasion, as shown by the mildness of experimental influenza in unanesthetized animals as compared with its severity when infection occurs during etherization, but the chief factor is the presence and activity of the causative viruses.

CLASSIFICATION

The group of infections of the respiratory tract are self-limiting diseases which have many epidemiologic, clinical and pathologic features in common. In the few studies available, the histologic changes of the nasal mucosa of the common cold [4] are almost identical with those of influenza in animals [9] and in man.[10]

In spite of many clinical similarities, if instances of infections are carefully studied individually or collectively, certain characteristics emerge which leave no doubt that a number of entities exist.[11] One may limit its attack to the nasal lining with profuse discharge (colds); one may cause sore throat (pharyngitis, tonsillitis); in one, constitutional symptoms predominate (grip); one is characterized by dry inflamed membranes with cough (viroid), and in another gastrointestinal symptoms may predominate (viral ? dysentery). Nevertheless, even in established entities clinical identification is obscured by variations in the susceptibility, immunity and reaction of the host to infection, which differences are reflected in various combinations of signs and symptoms and in the great variations of the severity of attacks in different persons and in the same person at different times. Differences also depend on the age group studied, on the general state of public health, on the season, on environmental circumstances and on other factors. In epidemics, attacks of all degrees of severity may be encountered ranging from subclinical infection or slight indisposition to severe

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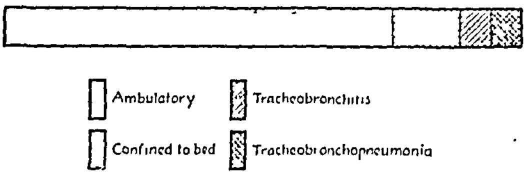
and even fatal, uncomplicated forms in which the whole respiratory tract may be affected (see the accompanying chart). Such variations may be accounted for by different reactions of different hosts to the same virus, and also to infection with a number of different viruses, some of them probably related, each of which causes disease characterized in general by a certain train of symptoms comprising an entity; yet there is so much overlapping as to defy clinical classification. The problem is, of course, further complicated when two or more different diseases concur in a community.



The relative proportions of mild and severe infections during an epidemic of "viroid" among 400 persons. Six per cent had pneumonia.[17]

field prepared by the viral infection, which indeed it may be. Yet there is ample evidence in diseases such as measles, vaccinia, lymphocytic choriomeningitis and influenza that a primary bacteria-free viral pneumonia occurs.[16] Although Reimann suggested in 1938 [11a] and later gave evidence [17] that viral pneumonia in certain epidemics represents only the severest form of an otherwise mild, widespread disease and is caused by the same agent, there has been a reluctance to accept this view partly from force of habit or tradition and partly because etiologic proof is absent. Subsequent reports [18] of similar observations add support to this concept. There is abundant epidemiologic, clinical and pathologic evidence of the viral cause of the pneumonic forms. Infection was transmitted by filtered washings from patients to volunteers in whom the disease developed with different degrees of severity, with and without pneumonia.[19] A newly isolated virus considered to cause about 60 per cent of attacks of viral pneumonia was isolated in 1944 by Eaton and his associates,[20] but studies on nonpneumonic forms have not yet been completed. If etiologic proof comes, it will be wrong to regard certain epidemic forms of viral pneumonia as a disease separate from the great preponderance of mild disease. To correct this defection, temporarily at least, the new name viroid was proposed [21] to cover all gradations of severity of the syndrome. The term if adopted should eventually be replaced by names for specific entities, as the causes are discovered.

Percentage of Symptoms and Signs in Various Infections of the Respiratory Tract

	A	B	C	D	E	F
Disease	Common cold	Exudative pharyngitis and/or tonsillitis	Grip "influenza"	Febrile catarrh	Viroid	Influenza A
Author	Townsend,[24a] 1927	Dingle,[28] 1944	Townsend,[24b] 1927	Stuart-Harris,[29] 1938	Reimann,[17] 1940	Stuart-Harris,[22a] 1938
Number of cases	3,545	60	297	28	400	84
Onset abrupt	40	..	50	42	25	75
Rhinorrhea	81	60	30	28	10	..
Nasal obstruction	44	60	20	70	80	73
Sore throat	14	80	29	80	60	43
Cough	31	70	47	80	70	71
Headache	10	65	58	64	80	87
General aching	14	..	67	53	30	51
Malaise	..	45	..	82	80	91
Chills	3	40	27	70	30	74
Fever	13	70	70	All ?	15	All ?
Discomfort in chest	5	..	21	40	..	24
Hoarseness	..	70	..	40	4	6
Sputum	12	..	18	50	5	31
Conjunctival injection	12	..	14	40	50	13
Photophobia	..	..	..	21	20	33
Anorexia	..	..	..	70	50	77
Diarrhea and/or vomiting	..	..	..	25	10	11
Sweating	..	..	..	50	60	31
Pneumonia	12	12	..	15	6	14
Complications	Common	Rare	Common		Rare	

Confusion in classification arises also from the nature and site of predominant symptoms, depending largely on the multitropism of the virus. In the respiratory tract, symptoms and signs obviously arise from the local effects of the virus, and constitutional symptoms may be accounted for by the circulation of toxin made or liberated by the viruses, if analogy may be drawn with the evidence of toxins of influenza viruses given by the Henles.[12] Viruses which affect principally the upper part of the respiratory tract at times also appear to be neurotropic [13] and to cause encephalitis, as in some instances of viroid [14] and influenza, dermatotropic as in the exanthems, and pneumotropic or enterotropic, as disclosed in the following paragraphs.

Pneumonias.—Pneumonia occurs in a small percentage of most epidemic diseases of the respiratory tract, as shown in the accompanying table. The incidence of pulmonary involvement will be found to be even higher in minor diseases of the respiratory tract than is indicated in the table, if roentgenograms were made routinely.[15] Until recently the pneumonia was usually regarded as a different disease or a complication caused by the secondary invasion by pathogenic cocci of a

Gastrointestinal Disorder.—Gastrointestinal derangement in the form of anorexia, nausea and vomiting occurs in some patients with disease of the respiratory tract, as shown in the table. This occasional occurrence gave rise to the undesirable term intestinal influenza, when in reality the symptoms are incidental to a disease of the respiratory tract. However, for the past twenty-five years reports have appeared of widespread epidemic diseases in which symptoms of gastrointestinal disorder predominate over those arising from the respiratory tract; these diseases seem to be specific entities commonly called epidemic nausea, vomiting and diarrhea. Their epidemiologic similarity to viral diseases of the respiratory tract, together with suggestive evidence that they are caused by filtrable, air-borne agents and enter the respiratory tract where they occasionally give local symptoms, justifies their mention as viral dysentery in this discussion.[22]

Terminology.—Medical history reveals many attempts at nomenclature, nosography and classification. The ancient Greeks used the terms coryza and catarrh; the Romans, gravado.[23] Later, influenza, grip, *Schnupfen, Erkältung, rhume, romadizo, la monga,* the cold, sniffles and others were introduced. Rhinitis, nasopharyngitis, tonsillitis, pharyngitis, laryngitis, tracheitis and pneumonitis or pneumonia are used according to the anatomic area affected, either alone or in various clumsy combinations, logically even as nasopharyngolaryngotracheobronchopneumonia when all areas are involved at once or in sequence, as they may be.

Because of the mass of confusing and uncertain factors just discussed, little progress in classification may be expected until etiologic diagnoses are possible. The first steps in this direction were made by Kruse in 1914 and later by others, who showed that colds were caused by filtrable agents.[24] A virus was cultivated artificially by Dochez. The greatest advances were the discovery of the virus of influenza A in 1933 by Smith, Andrewes and Laidlaw and, later, of influenza B by Francis and Magill, establishing influenza as a group of at least two specific entities.

For the sake of convenience in discussion and for the provision of possible points for further attack, some sort of arrangement of the common infections of the respiratory tract is desirable. A tentative grouping based partly on clinical and epidemiologic grounds and, so far as is possible, on an etiologic basis is proposed in the table. The outstanding features of each disease are emphasized in heavy type, and the obvious overlapping of most features illustrates the hazards of clinical classification. A brief discussion of each disease follows.

A, The Common Cold.—The symptoms and signs of the common cold are too well known from general personal experience to be recited here. Adequate reviews of epidemiologic, clinical and etiologic studies are available.[24] While differentiation may be impossible at times, reflexive, allergic, vasomotor or irritative rhinitis[23] should not be included in the group of colds caused by viruses. The outstanding features of colds are their periodic occurrence throughout the world in widespread epidemics or in sporadic form, characterized chiefly by rhinitis, rhinorrhea, mild indisposition and occasional complications by pyogenic cocci as shown in column *A* of the table. While the features listed statistically differ considerably from those in other columns, the common cold may be indistinguishable from influenza,[25] grip [26] and viroid.[17]

There are no accurate statistics in regard to the incidence of nonbacterial pneumonia as part of the primary infection in epidemics of the common cold. During mass roentgenography,[15b] evidence of pulmonary invasion is present much oftener than such invasion is suspected clinically.

B, Pharyngitis and/or Tonsillitis.—Because of the predominance of sore throat and of severer constitutional symptoms in pharyngitis and/or tonsillitis, this group is set apart from the common cold. According to Abernethy's experiments,[27] diseases resembling the common cold and pharyngitis were transmitted as distinct diseases to volunteers with incubation periods of one to two and five to six days, respectively. Although in column *B* of the table sore throat is statistically the same as in certain other columns, its predominance as a sign and especially as a chief complaint sets this group apart from the rest (Townsend [24a] and Dingle [28]) excepting influenza.[10]

According to Dingle's group [28] and contrary to common opinion, hemolytic streptococci were probably the cause in only 25 per cent of cases, as shown by serologic evidence; they were present but probably not the cause in another 25 per cent, and in 50 per cent there was no evidence of their presence or activity. While infections caused by streptococci were more severe than those caused by a presumptive virus, it is not possible to diagnose the condition carelessly called a "strep. throat" by inspection or by clinical evidence alone.

C and D, Grip and Febrile Catarrh.[29]—These groups in general comprise syndromes which, prior to 1933, were called grip or influenza and included specific influenza and viroid. Many other viral diseases accompanied with aching, fever and a normal leukocyte count, if undiagnosed specifically, may be mistakenly called grip, as has occurred in an epidemic of yellow fever in Brazil, in mild poliomyelitis and in lymphocytic choriomeningitis. The endemic influenza of Horsfall,[30] which often occurs during epidemics of influenza A or B, but without cultural or serologic evidence of either, and the unusual epidemic of Oliphant and Dawber [31] may be included here for the present. These groups differ chiefly from the common cold by their greater severity or greater proportion of more severe attacks and by the prominence of fever and constitutional symptoms. There are few distinguishing clinical features among them or even when they are compared with columns *E* and *F*, in which some of them may actually belong. Cough, nasal obstruction, dry but not painful pharyngitis, conjunctival injection and constitutional symptoms are common to all.

E, Viroid.—The symptoms and signs listed in column *E* include both those of the nonpneumonic forms and of viral pneumonia which are regarded here as different degrees of severity of the same entity or syndrome. The relative proportion of mild, moderately severe and pneumonic forms in one epidemic is illustrated in the accompanying chart. The signs and symptoms are much like those of the diseases in columns *C*, *D* and *F*, making the infections clinically indistinguishable from each other. A striking difference of viroid, as also recorded in most reports of severe forms, is the rarity of pyogenic complications. Diagnosis of the mild forms may be tentatively made by the coexistence of pneumonic forms during an epidemic and the demonstration of a cold agglutinin in a variable proportion of the patients during convalescence. Serum from a number of patients with mild nonpneumonic attacks neutralized Eaton's virus. General information of the viral pneumonias is reviewed elsewhere.[32]

F, Influenza A and B.—Numerous reviews of influenza [33] make detailed discussion unnecessary here. Since the discovery of its cause, influenza is removed from the indeterminate group of infections of the respiratory tract and established as an entity to serve as a model or standard against which others may be compared. The term influenza should now be used only in its restricted sense for disease caused by the viruses of influenza A or B. It is uncertain what name to apply to identical and often coincidental disease in which the virus of influenza or serologic evidence of its presence cannot be shown. It has been called influenza X or Y and endemic influenza.[30] It may be a different entity or it may represent attacks of A and B virus without demonstrable evidence thereof.

Influenza is said to differ from other infections of the respiratory tract by favoring secondary pyogenic bacterial invasion, yet this characteristic is not evident in all outbreaks. It was especially operative in the 1918-1919 pandemic, presumably of influenza A in its severest form.[33c] The high mortality rate was chiefly due to pneumonia caused by pneumococci, hemolytic streptococci and staphylococci and by a shocklike state. In a small proportion of cases in man[34] and in most animals experimentally infected,[34a] the lungs are attacked by the virus.

As stated earlier[35] influenza is clinically indistinguishable from other viral infections of the respiratory tract. In Adams' epidemic[10] among children, pharyngitis was the most characteristic feature. Swab preparations of material removed from the inflamed pharynx contain sheets of sloughed-off epithelial cells and an exudate of mononuclear cells characteristic of influenza A and of other viral infections of the throat. Diagnosis can only be made by the isolation and identification of the viruses or the serologic evidence of their activity by the complement fixation test, the Hirst chicken erythrocyte agglutination test and later by the demonstration of specific protective antibodies. Unfortunately, these tests are not yet generally used in the average diagnostic laboratory. Etiologic diagnosis is essential for epidemiologic investigation and for the efficient use and evaluation of the specific prophylactic anti-influenza vaccines now available.

TREATMENT

Nothing can be done specifically to shorten attacks of the group of diseases in question; and, except for influenza, little can be done to prevent them. Yet in spite of advice to the contrary in most modern textbooks, the management of the common infections of the respiratory tract often resembles an unreasoning mental reflex of applying a standardized ritual of purging, sweating, poulticing, gargling, cough prescriptions and pills—treatment which is rarely given for similar symptoms in other disease. Whether or not the outlay of millions of dollars[36] on obsolete, illogical medicaments, largely brought about by commercial advertising and self medication should concern physicians, a critical appraisal of the problem is needed, not only to prevent waste and actual harm, but also to reduce the cost of medical care. In the paragraphs that follow a critical appraisal of some of the common therapeutic and preventive procedures precedes a commentary on rational treatment and preventive measures.

CRITICAL APPRAISAL

Chemotherapy and Antibiotic Therapy.—In spite of the ineffectiveness of the sulfonamide compounds[37] and of penicillin[38] in viral diseases, these agents continue to be wasted in huge amounts in the treatment of viral infections of respiratory tract. Nor are there any facts to justify their use routinely to prevent possible secondary bacterial invasion which occurs in the minority of cases. Penicillin is less objectionable than the sulfonamides because of its relative lack of harmful side effects, but both agents if used too widely over long periods may give rise to strains of drug-fast pathogenic bacteria resistant to treatment with either.

Diet.—The old adage "stuff a cold and starve a fever"[39] should be interpreted to mean that there is no reason for withholding food during a cold but fevers, of course, should not be "starved." Diet in otherwise well nourished patients is of little importance during the short period of uncomplicated sickness.

Elimination.—Tradition favors the stimulation of excretion by the bowels, the kidneys and the skin to abort disease or to "get rid of the poisons," but there is no evidence that either effect is accomplished. Purgation may be harmful; it is unnecessary and exhausting. The same can be said for diuresis with unreasonably large amounts of water. It is doubtful if most of the remedies, such as sodium citrate, solution of iron and ammonium acetate, or spirit of ethyl nitrite, often used as diuretics, are effective.

It is difficult to account for the continued use of diaphoretics in the form of heat, blankets, compound powder of ipecac,[37b] hot lemonade or the mustard foot bath, which only increase the discomfort in certain infections already characterized by sweating. Severe diaphoresis is exhausting. A degree of vasodilation and mild sweating may provide a sense of comfort in "dry" types of disease of the respiratory tract, but no specific benefit accrues.

Alkalinization.—Despite the exploitation of the dangers of acidosis during colds by mineral water and nostrum vendors, citrus fruit merchants and others it is doubtful if acidosis significant enough to require treatment ever occurs in otherwise normal patients. Many of the advertised remedies are pleasant to take, however, and many are expensive.

Antipyretics.—General opinion now holds that a moderate degree of fever is helpful in overcoming infections, yet acetophenetidin, acetanilid, quinine, aminopyrine and salicylate compounds are widely used as antipyretics. They comprise the chief ingredients of many so-called "break-up-a-cold" nostrums. They have no effect on the infectious process. A reduction of fever and a false feeling of improvement may be harmful in tempting the patient to resume his usual activity.[40] The toxic and therapeutically effective doses often have little margin between them, and unpleasant or toxic side effects occur. The additional analgesic effect of certain of these drugs in moderate dosage provides the only justification for their continued use.

Irradiation.—Aside from a pleasant sense of warmth from infra-red rays and the psychologic effect of ultraviolet light, neither has a specific beneficial effect.[41]

Counterirritants.—Counterirritants applied to the chest or throat in the form of cupping; poultices of flaxseed, onions, mud or bread; capsicum, methyl salicylate, turpentine, mustard, hot goose or bear fat, and many proprietary compounds are traditional remedies. They were used to "draw the blood from congested areas." They are not harmful if properly applied to avoid burns and provide a pleasant sense of warmth, keep the patient's mind from other discomfort and guarantee the concrete evidence of solicitousness which so many enjoy during a dejected state. The comfort they provide can be furnished more easily by a hot water bottle or electric heating pad.

Cough Remedies and Expectorants.—Most cough remedies are inheritances of folk-lore. Yet many patients expect or demand a "cough mixture" in medical practice, purchase one of the hundreds of brands sold commercially or make their own. Few other human discomforts are so widely exploited by commercial interests as coughing. Coughing serves a useful purpose and should not be checked unless it is harassing or exhausting. Cough medicines commonly contain demulcents, expectorants and supposed antiseptics and serve as unnecessary vehicles for sedatives and other drugs. The popularity of many elixirs and nostrums depends largely on the amount of alcohol they contain.

Syrup of wild cherry U. S. P., syrup of tolu U. S. P. and elixir of terpin hydrate N. F. are anachronistic vehicles. If codeine or other drugs are to be used, they are better given alone. Demulcents have little effect except in the oropharynx, since they are swallowed down the esophagus and inflammation is present in the nose, larynx or trachea.

Expectorants may be irritating and should not be used during the inflammatory stage or in infections in which exudate is naturally either minimal or profuse. Experiments show that potassium iodide, ammonium chloride or ammonium carbonate and creosote compounds do not change the volume or viscosity of the sputum.[12] They are slightly emetic, tend to increase the flow of saliva, not of exudates, and disturb digestion.

In spite of the demonstrated expectorant action in animals,[12c] one wonders if it is desirable or necessary to increase the output of fluid in the majority of cases of infection of the respiratory tract, especially during the febrile period, or whether the addition of nausea to the symptoms is helpful. According to experimental studies of Hamburger and Robertson,[43] the more fluid the exudate, the greater its penetration to the depths of the lung to which infection may be carried; the more viscid it is, the greater the ease of its expulsion.

Local Therapy.—The importance of the coating of mucus and of ciliary activity has been mentioned, yet attempts are often made during infection of the respiratory tract to "treat" all accessible inflamed areas with gargles, irrigations, sprays, packs and swabs. These are often composed of irritant antiseptics such as silver-protein compounds, silver nitrate, phenol, iodine and essential oils either alone or dispensed in a host of expensive prescriptions. They are used in spite of the fact that none can be effectively bactericidal or virucidal on muscosal surfaces without destroying the membrane as well. Even if they were effective, they are washed away a few seconds or minutes after their application by ciliary activity, the flow of exudate and gravity.[44] Strong solutions may cause harmful inflammation, destruction of tissue and cilia and a prolongation of disease.[45] Furthermore, antiseptics do not penetrate to the subepithelial tissue.[46]

Gargles cannot reach areas other than the mouth and oropharynx. Medicated irrigations or sprays remove protective mucus; they may spread infection and if applied with force may cause invasion of the sinuses. Packing or swabbing can reach only a few accessible areas; they may injure the membrane and induce bacteremia.[47] It must be admitted that at times these procedures afford a temporary sense of comfort, but there is no evidence that the course of the disease is otherwise favorably influenced.

The local application of sulfonamide compounds in any form is condemned as dangerous. Penicillin, tyrothricin and streptomycin are not virucidal, and their effect in rhinitis is negligible.[48] The local application of ultraviolet rays is ineffectual and the inhalation of chlorine has long since been abandoned. The continual use of oily preparations as spray or nose drops may lead to the development of lipoid-cell pneumonia.

Nasal Vasoconstrictors.—According to Kully,[49] about two hundred and forty preparations of nasal vasoconstrictors as nose drops, sprays, inhalants and ointments can be purchased. Their use decreases neither the severity nor the duration of attacks and in some instances may prolong acute rhinitis.[40a]

According to some rhinologists,[50] ephedrine by causing vasoconstriction removes the protective hyperemia, lowers the local resistance and thereby violates the usual principles of the treatment of acute inflammation. A secondary congestive effect may follow vasoconstriction. The possible effect on the blood pressure in hypertensive patients must also be considered.

Amphetamine causes the same effect and may give rise to habituation.[51] Atropine sulfate, a common component of "coryza tablets," is given to lessen secretions. It diminishes the output of the nasal, lacrimal and salivary glands but has no effect on an inflammatory exudate. It may cause unpleasant dryness, tachycardia, palpitation and other discomfort.

CRITIQUE OF CERTAIN PREVENTIVE MEASURES

General.—Diet: Although experimental evidence suggests that animals given diets deficient in vitamins are more susceptible to certain infections[52] there is little hope that optimal nutrition[53] or the addition of vitamins[54] to the food of persons taking an average good diet will aid in the prevention of infections of the respiratory tract, in spite of extensive advertising to the contrary. There is no "anti-infectious" vitamin.[55] There is no evidence that sun tanning or exposure to ultraviolet light prevents colds. Face masks as usually worn are of no value.

Hardening: The so-called hardening or habituation to changes in temperature or to fatigue is ineffective for the development of resistance to infection of the respiratory tract.[56]

"Cold" Vaccines: Since infections of the respiratory tract are apparently caused by a variety of viruses, most of which have not been isolated, there is obviously no specific prophylactic vaccine against infections due to any except influenza A and B.[57] Even influenza vaccines are not wholly satisfactory. The usual commercially prepared cold vaccines contain a mixture of bacteria which have nothing to do with colds, except perhaps as secondary invaders in a small percentage of cases. And even if they did, there is no acceptable evidence that vaccine prevents their invasion. Extensive controlled studies by Diehl and others have shown that cold vaccines whether given orally, parenterally or as a nasal spray do not prevent colds.[58] Gamma globulin is ineffective as a prophylactic agent.[59]

Tonsils and Adenoids.—According to Kaiser[60] and to Smiley,[61] colds occurred in children or adults equally whether or not their tonsils had been removed. Nor did tonsillectomy and adenoidectomy reduce the incidence of sinusitis, laryngitis or bronchitis. Obstructive adenoids, however, did appear to bear a relationship to frequent colds.[60]

It would seem from the preceding discussion that little of value is left for the treatment of this great group of diseases, which in a specific sense is true. Until the causes are discovered and specific therapy is developed, there is nothing available to prevent attacks, except of influenza, or to lessen the severity or shorten the duration of these infections. On the other hand, a number of procedures are recommended to lessen the discomfort of the patient, to provide for unimpeded natural recovery and to lessen the danger of complications.

RATIONAL THERAPY

Treatment should never be standardized but should be suited to the needs of each patient.

Rest.—Rest, as for any other infectious process, is the best treatment for acute disease of the respiratory tract, especially if fever is present, in which event confinement to bed is necessary.[40a] Rest and confinement serve several purposes: (*a*) to aid recuperation in itself, (*b*) to lessen complications, (*c*) to prevent the spread of the disease to others and (*d*) to avoid contact of the patient with carriers of pathogenic bacteria. It is common experience to observe, however, that in the mildest infections the discomfort therefrom is often less annoying if the usual occupation or other diversion is pursued.

Diet and Fluids.—Little attention need be paid to diet and fluids in the average uncomplicated, short infection as long as reasonable amounts are ingested. The amounts of both food and liquids may be suited to the patient's choice. In severe cases the caloric intake, the bulk of the diet and the amount of fluid must be regulated accordingly.

Elimination.—If the habitual function of the bowel is undisturbed nothing need be done.[49a] For constipation the diet should be adjusted, and mild laxatives or enemas may be used. For diarrhea, rest in bed, regulation of the diet and heat applied to the abdomen are effective. Camphorated tincture of opium U. S. P. may be helpful at times. Patients who sweat profusely should be kept in bed, kept dried and given a change of linen as often as necessary. Atropine sulfate in doses of 0.6 mg. (1/100 grain) may lessen sweating. Analgesic drugs which increase diaphoresis should not be given.

Certain patients, but not all, receive comfort from mild diaphoresis provided by hot drinks, a hot bath, acetylsalicylic acid, a mixture of codeine and papaverine hydrochloride[62] and beverages containing alcohol.

Analgesics.—Aching and headache are best controlled by warmth, rest in bed and the commonly used salicylate compounds, the amounts used being dependent on the relief afforded. The temporary symptomatic benefit does not terminate the infection. Drugs should not be given routinely but only if necessary. Because of the inherent dangers or the unpleasant side effects, acetophenetidin, acetanilid, aminopyrine and caffeine need not be used.

Insomnia or restlessness are lessened by mental ease, comfort, small amounts of alcohol, hot drinks, sodium bromide or barbiturate compounds given only as needed. Alcohol has been used for generations to abort impending colds or to treat them. Without doubt in reasonable doses it provides comfort, induces drowsiness and an appropriate desire to rest; it causes peripheral vasodilatation and reestablishes circulation in chilled cutaneous and mucosal surfaces.[63]

Antibiotic agents or sulfonamides are used only in the presence of suspected or known complications caused by bacteria susceptible to their effects.

RATIONAL LOCAL THERAPY

Nasal Obstruction and Rhinorrhea.—Even temporary relief from the discomfort of nasal obstruction and running nose justifies the use of vasoconstrictive drugs[64] like ephedrine, epinephrine, naphazoline hydrochloride and amphetamine despite the objections mentioned previously. They are most safely applied in the form of a dilute, gentle spray or in convenient inhalers (amphetamine, 2-aminoheptane), but each should be used minimally; that is, as seldom as possible, and only to the point of opening the airway. The unphysiologic principles involved in the resulting ischemia and the possible irritative effect, idiosyncrasy, the presence of hypertension and the danger of habituation must be considered.[64a] Certain patients obtain relief by the inhalation of volatilized menthol, camphor, volatile oils and resins or by exposure to the heat of an open fire or to infra-red light. In others, cold air offers more comfort.

Vasoconstriction by the means just mentioned often controls rhinorrhea so that atropine with its unpleasant effects is rarely needed. The opposite condition, or excessive dryness, is aided by humidifying and cooling the frequently overheated, desiccated indoor air in winter.[49a] Gentle spray of isotonic solution of sodium chloride into the nares is helpful. Solutions used intranasally are not irritating if their hydrogen ion concentration is nearly neutral, in a range between p_H 6.8 to 8.4.[7c,d] The nose should be blown gently and as seldom as possible through both nostrils at once into disposable tissue. Thorough drying and ointment applied to the nares prevents chapping. Lesions of incidental herpes simplex should be sponged frequently with 95 per cent alcohol; ointments should not be used.

Sore Throat.—The unphysiologic principles, the futile and possibly harmful effects of gargling or swabbing with medicated solutions hardly justifies their use for the transitory relief they afford. Little can be done safely for painful pharyngitis besides the use of general analgesics or narcotics, spraying with warm isotonic solution of sodium chloride or solutions containing mildly anesthetic agents like thymol (liquor antisepticus, N. F.), or the application of heat to the throat. The application of cocaine solution is subject to the dangers of idiosyncrasy and habituation.

Demulcents like slippery elm, glycyrrhiza or glycerin in single swallowed doses exert a brief soothing effect. For a continual effect, they are better applied as lozenges dissolved in the mouth, so long as the digestion is not disturbed.

Cough.—A degree of coughing may be desirable and needs no treatment in the majority of patients, except when its frequency must be lessened somewhat to permit sleep and when its severity is painful, exhausting or dangerous. Treatment depends on whether the cough is caused by irritation from inflammation or dryness in the upper passages or from the collection of exudate lower in the respiratory tract. Coughing is often unnecessary and habitual. It can be voluntarily restrained if attention is directed to the fact, and there is no advantage in struggling to raise exudate which would be resorbed naturally. When cough is due to dry irritation, cooling and humidification of the air with elaborate systems or cheaply with water vaporizers is helpful. Inhalation of steam, with or without nonirritating aromatics (benzoin, camphor, menthol or eucalyptol) or spraying with isotonic solution of sodium chloride is helpful. The same result may be accomplished with slowly dissolving aromatic lozenges. A cloth binder (not adhesive tape) applied to the lower part of the chest and upper part of the abdomen gives a sense of comfort and support and relieves the soreness of the muscles. In some cases, 0.5 cc. of 0.5 per cent solution of *p*-chlorophenol in liquid petrolatum sprayed into the larynx or trachea with a curved-tip syringe gives relief for several hours. The substance has an anesthetic effect but is irritative.

Patients should restrict the use of their voice during the inflammatory stage of the infection. Smoking is generally contraindicated.

In infections with profuse secretion, coughing is helpful. So-called expectorant drugs have little or no effect on the tenacity of the exudate and often derange the digestion. Perhaps the best physiologic expectorant is carbon dioxide[65] which if inhaled in 5 or 10 per cent concentration with oxygen increases the depth and rate of respiration, increases muscular and ciliary activity and aids in the expulsion of exudate.

Codeine in doses of 5 to 10 mg. is the drug of choice for quieting overactive cough reflex.[66] Larger amounts may increase irritability. It should be given in tablet form, not in sweetened vehicles. For extremely severe persistent or paroxysmal cough, morphine may be used as a last resort. Diacetylmorphine is too depressive and may cause addiction.

Treatment of the Severe Pneumonic Forms of Infection.[32b]—The symptomatic treatment of the severe pneumonic forms of infection is essentially the same as that previously described. Dyspnea and cyanosis improve with oxygen therapy. Circulatory failure requires appropriate supportive management.[66a] The question of specific therapy with sulfonamides or with antibiotics often arises. They need not be given unless it is certain or reasonably certain that infection with drug-sensitive bacteria exists. There is no acceptable evidence of the beneficial therapeutic effect of either roentgen therapy or convalescent serum. Convalescence of one to two weeks is desirable.

RATIONAL PREVENTIVE MEASURES

General.—Instruction of the public in regard to the fallacies or benefits of various prophylactic measures is perhaps the most important measure. Public opinion may eventually oblige the ambulatory patient to isolate himself voluntarily during the contagious period, and persons especially susceptible to infections may learn to avoid the proximity of those who are ill or of crowds when colds are prevalent. Patients should learn to restrain coughing, sneezing and kissing. Nasal exudates and sputum should be deposited in tissue paper and burned. There are no practical means by which the asymptomatic carrier may be detected. Strict isolation could prevent infection in noncarriers, but it is seldom possible. Isolated communities often pass through a winter without colds until infection is introduced by visitors.[66b]

Although excellent physical condition, peace of mind, adequate diet and pleasant weather supposedly furnish resistance, infections of the respiratory tract occur for no obvious reason in otherwise robust persons. However, certain circumstances known by common experience to lead to colds such as exposure to wet and cold, sudden chilling in drafts, volatile irritants, dust, fatigue and other excesses should be guarded against, or neutralized by rest, warmth and comfort.[66c] Reasonably comfortable temperature and humidity of air in rooms is desirable, but no evidence is available as yet of their specific value. Residence in a climate where colds are less frequent is recommended for those who are subject to frequent infections, if economic circumstances permit.

New methods of sterilizing the air of closed quarters give promise of success. Volatilized propylene glycol in high dilution reduces the incidence of colds in controlled groups of persons[67] providing they do not leave the sterilized atmosphere. The same result has been noted for air irradiated with ultraviolet light, but recent experience[68] shows that it is not always effective.

Vaccines.—Except for influenza, no specific prophylactic vaccines exist.[69]

Local Measures.—As indicated previously the mucous coating and ciliary activity are perhaps the best barriers to infection. No measures should be used which disturb them. Mechanical obstruction of the nose by polyps or adenoids should be corrected surgically. Unless the nasal septum is extremely deviated, it should not be "straightened."

SUMMARY

The common infections of the respiratory tract of viral or presumably viral origin can be tentatively grouped on epidemiologic, clinical and etiologic grounds as the common cold, pharyngitis, grip, viroid and influenza. The causes of some are known and those of the rest await discovery before final classification is possible. Many preventive and therapeutic measures in common use are in need of revision or deletion. Except for influenza there are no specific preventive procedures, and no specific therapy exists for any infection of the group. Management should be suited to the needs of the patient in order to relieve discomfort, to prevent complications without impeding the natural process of recovery and to minimize the spread of infection to others.

LEUKOPLAKIA (LEUKOKERATOSIS) OF THE PALATE, PAPULAR FORM

Its Relation to the Use of Tobacco

Chairman's Address

CLYDE L. CUMMER, M.D.
Cleveland

Much has been written concerning leukoplakia buccalis, but references to its occurrence on the palate are scanty. Moderate diffuse grayness in this area is not an unusual observation, and plaques similar to those on the mucosa of the cheeks are mentioned occasionally. However, the first appearance of the papular eruption of palatal leukoplakia in the American medical literature was in an article by Fordyce and MacKee[1] published in 1926. Without elaboration in the text, there was a photograph which portrayed a condition that the legend designated as "mucous adenomas of the palate." Under the title "pseudoleukokeratosis of the buccal mucous membranes" Grütz[2] described 3 cases in 1928. In the succeeding year Howard Fox[3] presented a patient at a dermatologic meeting as having "gray rugae of the hard palate." From the description I infer that this was an example of the same disease. In 1930 Harold Orr[4] reported 7 cases of a "peculiar papular eruption of the hard palate" and described the histologic observations. Since then reports have been added by Hückels,[5] Krainz and Kumer,[6] Ronchese,[7] Tappeiner,[8] Thoma[9] and Cahn.[10] Photographs with-

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Acknowledgment is made of the assistance of Dr. Howard T. Karsner in the preparation of the photomicrographs and of Dr. Donald J. Rehbock in the histologic studies. Dr. George Miller MacKee furnished the photograph of the patient whose case was originally reported by Fordyce and MacKee.[1] Dr. Charles G. LaRocco cooperated in the clinical observations at St. Vincent Charity Hospital.

[1] Fordyce, J. A., and MacKee, G. M.: Diseases of the Oral Mucosa, Arch. Dermat. & Syph. **13:** 601-642 (May) 1926.

[2] Grütz, O.: Ueber Pseudoleukokeratose der Mundschleimhaut, Dermat. Wchnschr. **87:** 1075-1078 (Aug. 4) 1928.

[3] Fox, H.: Gray Rugae of the Hard Palate, Arch. Dermat. & Syph. **19:** 139 (Jan.) 1929.

[4] Orr, H.: Peculiar Papular Eruption of the Hard Palate, Brit. J. Dermat. **42:** 436-437 (Oct.) 1930.

[5] Hückels, E.: Die papelförmige Leukoplakia des harten Gaumens alter Tabakraucher, Inaug. Dissert., Kohn, 1931.

[6] Krainz, W., and Kumer, L.: Ueber eine Raucherleukokeratose des Gaumens, Arch. f. Dermat. u. Syph. **168:** 224-229, 1933.

[7] Ronchese, F.: Leukoplakia and Tobacco, Arch. Dermat. & Syph. **36:** 1222-1224 (Dec.) 1937.

[8] Tappeiner, S.: Ueber tabakbedingte Leukokeratosen des Gaumens, Arch. f. Dermat. u. Syph. **181:** 173-177, 1940.

[9] Thoma, K. H.: Stomatitis Nicotina and Its Effect on the Palate, Am. J. Orthodontics (Oral Surg. Sect.) **27:** 38-47 (Jan.) 1941.

[10] Cahn, L. R.: A Note on the Histopathology of Leucoplakia of the Palate, Am. J. Orthodontics (Oral Surg. Sect.) **27:** 35-37 (Jan.) 1941.

out clinical description are found in an article by McCarthy[11] and in Burket's[12] text (table 1). An excellent general description is given by Hayes Martin.[13] The condition has been referred to as papilliform leukoplakia, smoker's keratosis of the palate, smoker's palate, tobacco-conditioned leukokeratosis of the palate and stomatitis nicotina, as well as by the terms already mentioned.

SYMPTOMS

Subjective symptoms are slight or absent. Only occasionally does the patient perceive any roughness of the palate with the tip of the tongue, and the majority are unaware of the disease until it is discovered by examination. The appearance is characteristic. The notes I made at the time when Fordyce and MacKee's[1] patient, a white man aged 54, was first seen in Dr. Fordyce's office showed that the anterior third of the hard palate was almost covered by numerous closely aggregated small gray papules, pinhead in size, with slightly roughened surfaces. The posterior third of the hard palate and the entire soft palate were covered with bright red papules of similar size, which were equally closely set but had more hemispheric tops and were less firm in consistency (fig. 1). A water color drawing made at the time and still in my possession shows these characteristics clearly.

Table 1.—*Cases Reported in the Literature*

Observers	Sex			Ages	Use of Tobacco
	Male	Female	Not Stated		
Fordyce and MacKee[1].	1	..	..	54	Yes
Grutz[2]	3	..	..		Pipe
Fox[3].................	1	..	..	33	Constant, cigarette
Orr[4].................	7	..	..	1 under 40 6 over 40	Heavy
Huckels[5] .	12	..	..	50 to 77	Heavy, pipe
Krainz and Kumer[6] ..	10	..	.	..	Heavy
McCarthy[11] (cut only)	..	..	2	..	Yes
Ronchese[7].	1	1	..	..	1 none; 1 pipe
Tappeiner[8]	2	..	..	58, 75	Heavy, pipe
Thoma[9].	4	..	..	54 ? ? 75	Excessive, cigarettes Continuous, pipe Heavy, pipe Pipe, 1 lb per mo.
Cahn[10].....	1	..	..	40	Very light
Cahn[10]..	..	1	..	60	
Burket[12] (cut only)...	..	..	1	..	
Levine	1	..	..	55	Heavy, pipe
Cummer	6	..	..	47, 62, 64, 64 70 71	Pipe
Totals	49	2	2		

With certain variations this description would apply to the majority of recorded cases. The entire palate is not always involved, nor are the papules inevitably small, for some as large as 5 mm. have been observed (fig. 2). The eruption appears more frequently on the hard palate than on the soft palate. Krainz and Kumer[6] noted a sharp line of demarcation between the involved and uninvolved portions of the hard palate in some instances but not in others. The mucosal surface intervening between the gray papules, although usually gray, may be fairly normal in appearance. Grütz[2] found that the white and thickened mucous membranes appeared as superficial cross folds, while Krainz and Kumer[6] described lengthwise and crosswise folds in 2 of their patients. When the papules are situated on the rugae there is a suggestion of gray bands crossing the anterior portion of the hard palate.

The prominence of the rugae exposes them to irritation. To determine the nature of their structure longitudinal sections were cut as shown in figure 3. They showed that the epithelial layer is the same in the elevated and depressed areas and that the elevations are due to pads of connective tissue beneath the rugae (fig. 4). In edentulous mouths the rugae are either entirely absent or greatly flattened.

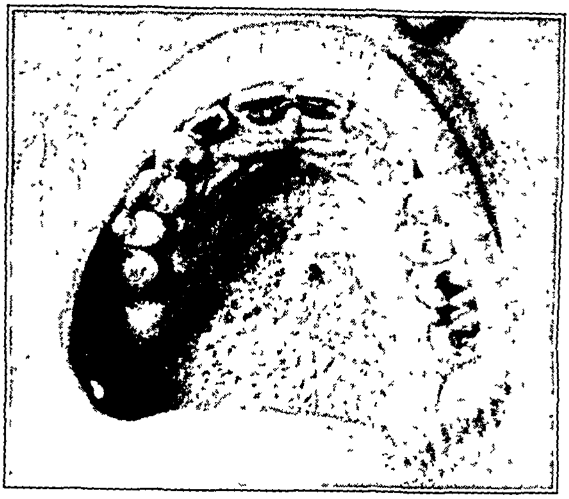

Fig. 1.—Papular leukoplakia. Original case of Fordyce and MacKee[1] Depression in center of hard palate is site of biopsy.

The striking and characteristic feature of papular leukoplakia is the occurrence of red dots, often with depressed or umbilicated centers, which cap some of the papules. These are observed only on the mesial-posterior portion of the hard palate and the soft palate. In this region Hückels[5] stated that the palatine mucous glands are situated, isolated at first and arranged in lengthwise rows further back. He quoted von Szontagh as having counted two hundred and fifty such glands on the hard palate of 1 person.

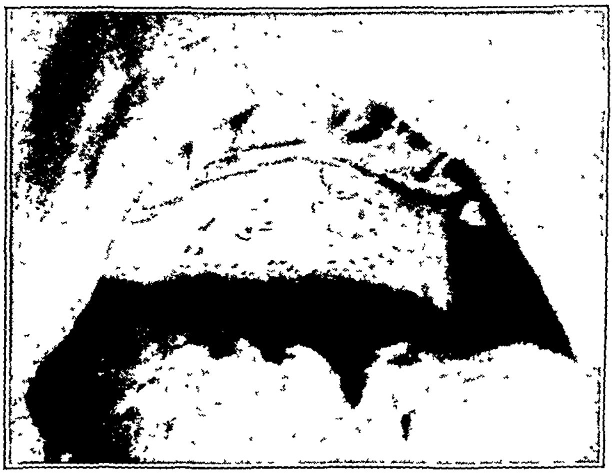

Fig. 2.—Papular leukoplakia, case 6. The papules are larger.

To confirm this statement and to plot the exact location of the palatine glands, palates were secured at autopsy and sections cut crosswise at regular intervals. Their distribution, which did not seem to vary with the age of the persons, is shown diagrammatically in figure 3. It should be observed that the central-posterior area in which they are situated is the only part of the hard palate in which red papules are found. They are also observed in many cases on the soft palate, which contains many mucous glands.

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[11] McCarthy, F. P.: Etiology, Pathology and Treatment of Leukoplakia Buccalis, with Report of Three Hundred and Sixteen Cases, Arch. Dermat. & Syph. 34: 612-623 (Oct.) 1936

[12] Burket, L. W.: Oral Medicine, Philadelphia, J. B Lippincott Co, 1946, p. 137.

[13] Martin, H.: Tumors of the Palate (Benign and Malignant), Arch. Surg. 44: 599 635 (April) 1942.

FREQUENCY OF OCCURRENCE

Eichenlaub's[14] study is of value in ascertaining the frequency of palatal leukoplakia. In examining 16,802 veterans at the Veterans Administration Facility in Washington, D. C., he found 327 persons with leukoplakia, with involvement of palatal and buccal mucosa in 3 instances and of the palate alone in 2. It is my opinion that the condition is frequently overlooked in routine examination and that it would be found much oftener if the palate were scrutinized in all cases. After discovering their first case accidentally, Krainz and Kumer[6] collected 9 more in a few months. Obviously the true nature of the lesions was not recognized even in some of the earlier cases reported by competent observers because of lack of familiarity with the clinical picture. Doubtless this accounts for the paucity of references in the American literature, to which Krainz and Kumer[6] have called attention. In this country dentists seem to have been more alert in the recognition of this disease than have the medical practitioners. To determine its approximate frequency in dermatologic practice I examined 587 palates with the results shown in table 2.

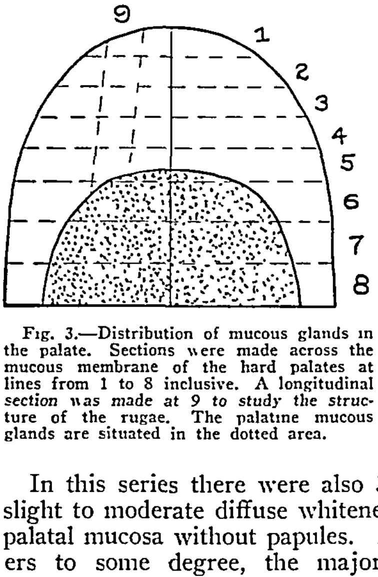

Fig. 3.—Distribution of mucous glands in the palate. Sections were made across the mucous membrane of the hard palates at lines from 1 to 8 inclusive. A longitudinal section was made at *9* to study the structure of the rugae. The palatine mucous glands are situated in the dotted area.

The number examined cannot be regarded as other than a sampling, but the table indicates that about 1 person in every 100 displays this condition, and the incidence is greatest in the later decades.

In this series there were also 33 persons exhibiting slight to moderate diffuse whiteness or grayness of the palatal mucosa without papules. All but 1 were smokers to some degree, the majority cigaret smokers. Their ages ranged from 17 to 71 years.

REPORT OF CASES

Case 1.—G. F., a white man aged 70, was a heavy pipe smoker. Flat-topped gray papules and rounded papules with red dots were seen on the hard and on the soft palate; there was no denture. A biopsy was made.

Case 2.—J. G., a white man aged 64, smoked fifteen to twenty pipesful of tobacco daily. He exhibited papular gray lesions, almost verrucous, with red dotted papules; also, a red, velvety appearance of the soft palate was observed. There was no denture.

Case 3.—T. M., a white man aged 47, smoked 1 to 1¼ ounces of tobacco in a pipe each day. Gray papules over the rugae on the anterior portion of the hard palate, along with grayness and red points on the soft palate were observed. There was no denture.

Case 4.—J. O., a white man aged 64, was a heavy pipe and cigar smoker. Gray papules and diffuse grayness of the entire palate, as well as the usual characteristic red points were observed. Buccal leukoplakia was also evident. There was no denture.

Case 5.—A. S., a white man aged 62, smoked four or five pipesful of tobacco daily and exhibited a patch about 1.5 cm. in diameter in the central portion of the posterior third of the hard palate, with gray flat-topped papules and also with papules which had umbilicated red centers. There was no denture.

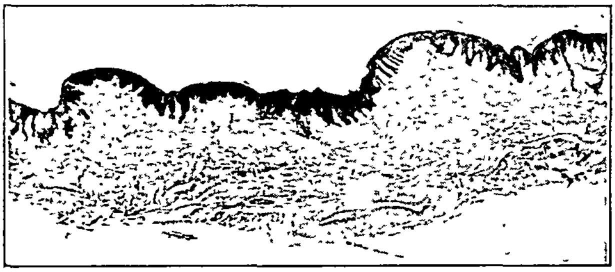

Fig. 4.—Longitudinal section through the anterior portion of the mucous membrane of the hard palate at *line 9* as indicated in *figure 3*. The elevations of the rugae are made up of connective tissue. There are no mucous glands in this area (× 7.4).

Case 6.—W. P., a white man aged 71 who smoked three small cans of tobacco a week, exhibited definite involvement of the palate with many flat-topped gray papules and umbilicated red topped papules on the middle and posterior thirds of the palate. There was no denture; a biopsy was made.

In addition I am permitted to report a case presented by Dr. Benjamin Levine of Cleveland at a meeting of the Cleveland Dermatological Society with the provisional diagnosis of angiokeratoma.

S. H., a white man aged 55, had a score or more of hyperkeratotic papillary lesions of the hard palate. In the center of each was a small bright red area, whereas the rest of the lesion was white. There had been considerable pain at times. A biopsy was made. The Kline test was negative. This man was a heavy pipe smoker.

HISTOPATHOLOGIC OBSERVATIONS

Histologically the essential observations include thickening of the epithelium with hyperkeratosis and dyskeratosis (fig. 5). Elongation and thickening of the rete pegs was usual. While Orr,[4] the first to describe the histologic changes in this disease, stated that there were no inflammatory changes in the dermis, Krainz and Kumer[6] observed slight changes in the cutis together with a moderate degree of perivascular infiltration of round cells and leukocytes; Ronchese[7] observed a small amount of fibrous stroma containing leukocytes, and Kurt Thoma,[9] round cell inflammation of the corium. Fordyce's case[1] showed considerable round cell infiltration.

Table 2.—*Frequency of Leukoplakia in Dermatologic Practice*

Age Groups, Years	Number Examined		Number with Papular Leukoplakia of Palate	
	Men	Women	Men	Women
10-19	22	38	0	0
20-29	72	79	0	0
30-39	47	61	0	0
40-49	61	53	1	0
50-59	60	25	0	0
60-69	33	12	3	0
70-79	16	3	2	0
80-89	4	1	0	0
Totals	315	272	6	0

Adequate study can be made only in serial sections; biopsies of my cases revealed dense infiltration of lymphocytes and polymorphonuclear leukocytes in the corium and decided dilatation of the capillary spaces in the papillary bodies immediately adjacent to the narrowed ducts of the palatine glands (figs. 6 and 7). It is possible that these enlarged capillary spaces filled with erythrocytes give to the rounded papules the bright red color which characterizes them, but Rehbock has suggested that the red color is reflected by the minute dots, possibly composed of mucin, at the orifices of the ducts.

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[14] Eichenlaub, F. J.: Leukoplakia Buccalis, Arch. Dermat. & Syph. 37: 590-596 (April) 1938.

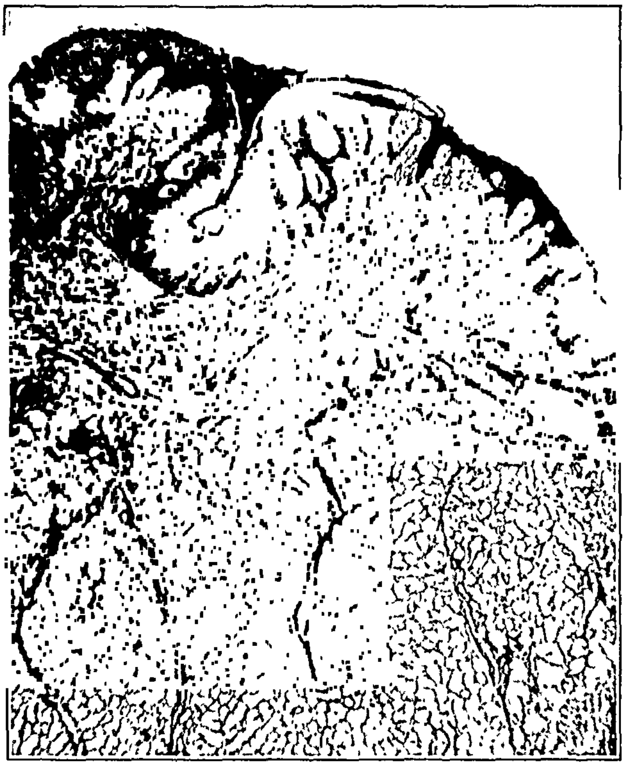

Fig. 5.—Biopsy in Fordyce and MacKee's[1] case, shown in figure 1. *Note hyperkeratosis and, in corium, cellular infiltrate* (× 30).

Krainz and Kumer[6] stated that the red spots seen microscopically appeared in section as moderately widened outlets of the mucous glands due to narrowing of the orifices by the horny layer and a resultant depression, while Cahn[10] in serial sections found that the leukokeratotic epithelium had broken in the center of the red papules to expose the corium. He felt that the red spot was not the orifice of the gland because both the red center and the orifices of the glands become occluded by keratinized epithelial cells. In sections studied by me the epidermis completely occluded the external orifice of the gland, the portion of the duct included within the specimen showed no dilatation or cystic change, and there was no adenomatous change.

Not long after seeing Fordyce and MacKee's case[1] I found that the condition was not adenomatous by comparing the sections from their case with sections of tissue removed from a corresponding location in a series of about 20 apparently normal palates. Cahn[10] stated that his sections showed no adenomas.

ETIOLOGY

Age and Sex.—Papular leukoplakia of the palate occurs predominantly in men. Of 53 cases, including 46 collected from the literature and the 6 observed by me, the sex is stated in 51, of which 49 occurred in men and 2 in women.

Orr[4] stated that his 7 patients were all over 40 years of age except for 1, aged 30. Fox's[3] patient was only 33; Cahn[10] had 1 aged 40; 1 of mine was 47, and in all the other cases reported, the ages ranged from 50 to 77.

Tobacco.—A history of tobacco smoking was obtained in all patients except 1 of Cahn's,[10] by whom it was denied; another of his, who made no statement, and 1 of Ronchese's[7] by whom smoking was denied. The descriptive terms adopted by many authors clearly indicated their opinions as to the causation of the condition. Pipe smoking was incriminated more often than cigar or cigaret smoking.

Additional evidence of the role of smoking was adduced by Krainz and Kumer,[6] who, in a 67 year old man, previously a nonsmoker, produced a gray-white color of the palatal mucosa with characteristic red spots by having him smoke a pipe excessively. Equally convincing evidence was found by Tappeiner[8] and by Thoma,[9] whose patients exhibited the lesions on the part of the palate not protected by a partial denture, although none were evident under the denture.

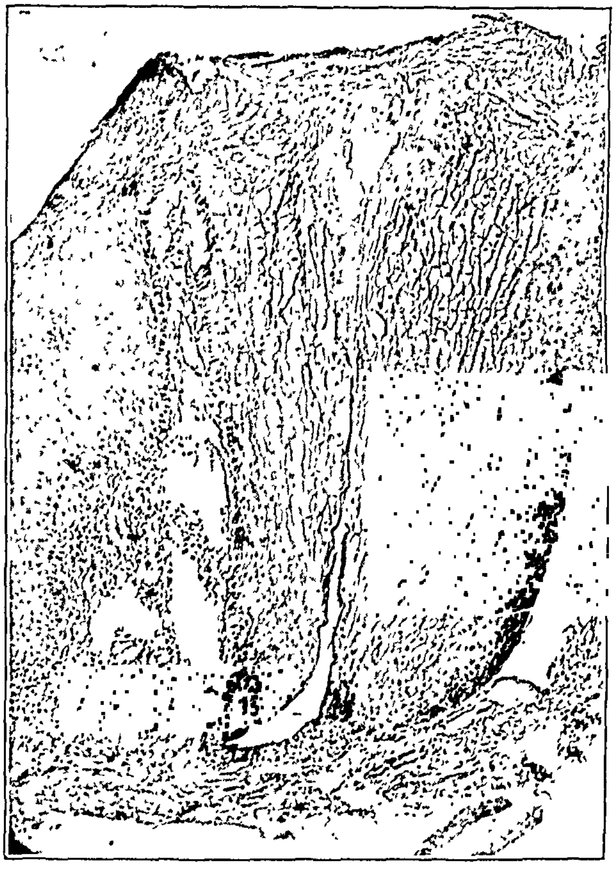

Fig. 6.—Section made as one of serial sections. Hyperkeratosis blocks the distal portion of the gland duct and flattens the epithelial cells lining the duct; there is a cellular infiltrate in the papillary body adjacent to the duct (× 74).

Vaughan[14a] was able to clear up palatal leukoplakia by having his patient wear vulcanite plates.

The effect of abstinence from tobacco is significant. Grütz[2] found that the lesions disappeared when pipe

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14a. Vaughan, H. C.: Leukoplakia, J. Am. Dent. A. 22:65 (Jan.) 1935.

smoking was stopped and smoking otherwise was restricted. In Orr's[4] experience the only measure which resulted in cure was cessation of smoking. Two of his patients were syphilitics, 1 of whom stopped smoking with the resultant disappearance of the lesions in the course of four months. The other continued to smoke, and the lesions remained unchanged at the end of a year. According to Hückels[5] the prognosis was good when smoking was stopped. Thoma[9] also observed improvement in his patients after smoking had been discontinued.

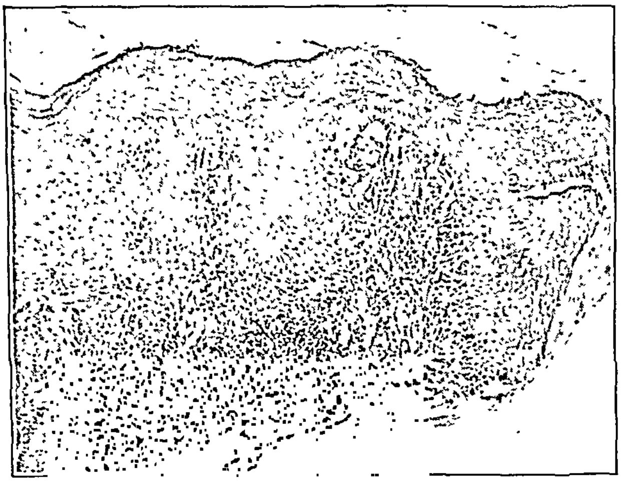

Fig. 7.—Section from same case. Hyperkeratosis, capillary enlargement and cellular infiltrate (× 67).

In this connection it might be well to consider briefly the opinions of some of those who have reviewed the general subject of leukoplakia of the mouth and its relationship to tobacco. Bettman[15] asserted that he had never seen leukoplakia in a nonsmoker. King and Hamilton[16] found that 69 out of 80 patients used tobacco in some form. Sturgis and Lund[17] stated that most authors agree in the observation that tobacco is used by 80 to 95 per cent of the patients with leukoplakia. In Eichenlaub's[14] 327 cases of leukoplakia, tobacco had been used by all the patients except 5.

The type of smoking is important. McCarthy[11] expressed his conviction that the pipe is the most irritating agent and emphasized the importance of the method of smoking in the localization of leukoplakia. It is suggested that pipe smoking is especially likely to produce palatal changes since the stream of hot and unfiltered smoke is delivered directly against the roof of the mouth, whereas cigaret and cigar smoke is to some extent filtered through the stub or butt and is diffused through the entire oral cavity.

Hayes Martin[13] seldom found mucous membrane changes in the soft palate "except in heavy cigar smokers (those who smoke fifteen to twenty a day) in whom the soft palate and the base of the tongue become deep red and congested with marked hypertrophy of lymphoid tissue. Cancer . . . associated with heavy cigar smoking (an expensive habit) has been termed 'rich man's cancer.'"

There are frequent references to Roffo's[18] experiments in which buccal leukoplakia was produced in rabbits by daily exposure to tobacco smoke. However, Bogen and Loomis,[19] who carried out experiments with mice and rabbits, made cutaneous application of the tar derived from the destructive distillation of tobacco, and treated controls similarly with coal tar of known carcinogenic properties. While the malignant change was observed in the controls, none resulted from the application of tobacco tar. The authors themselves pointed out that these results do not controvert the prevailing although not unanimous clinical observation that cancer of the mouth is unduly prevalent among those who are accustomed to the use of tobacco, since other factors such as mechanical irritation and the temperature of the smoke are involved.

Syphilis.—Formerly syphilis was considered prominent in the causation of leukoplakia. There has been a trend away from this concept in recent years, except possibly in regard to leukoplakia of the tongue. For example, Quick[20] has stated that it is misleading to associate leukoplakia with tertiary syphilis, and that there is probably more leukoplakia of nonsyphilitic than of syphilitic origin.

The relationship of syphilis in the reported cases of palatal papular leukoplakia appears to be slight. Only 2 of Orr's[4] 7 cases, 1 of Hückels's[5] 12 cases and 1 of Tappeiner's[8] cases were mentioned as disclosing evidence of syphilis either in the patients' history or in the results of laboratory examination. Tappeiner's case was significant because the patient was an old syphilitic with positive serologic examinations, but the lesions were seen only on the portion of the palate not protected by a denture.

TREATMENT

The indications for treatment are apparent. Cessation of smoking, especially pipe smoking, has resulted in either improvement or cure in too many cases to be disregarded. The wearing of a denture to protect the palate might be indicated in the case of inveterate, confirmed smokers.

Since the present vogue is to regard all human ills as deficiency diseases, it is inevitable that leukoplakia should be attributed to vitamin deficiency, the lack of both vitamin A and vitamin B having been incriminated. No convincing report of the beneficial effect of the administration of vitamin A has been found, but Abels, Rekers, Martin and Rhoads,[21] in an article accompanied by illustrations, have referred to results obtained by the use of either yeast alone or yeast with iron and hydrochloric acid. Of 23 patients so treated, 4 obtained the disappearance of all or a large part of the leukoplakic lesions on lips, tongue or buccal mucosa, while in 7 others the lesions became thinner or lost some of their yellow-white appearance.

PROGNOSIS

The prognosis in papular leukoplakia of the palate is good as far as may be judged from the small amount of clinical material on record. This has been especially true when smoking was discontinued. In none of

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[15] Bettman, M. M.: Significance of Leukoplakia, J. Am. Dent. A. **18**: 1877-1883 (Oct.) 1931.

[16] King, H., and Hamilton, C. M.: Leukoplakia Buccalis: Study of Eighty Cases, South. M. J. **24**: 380-383 (May) 1931.

[17] Sturgis, S. H., and Lund, C. C.: Leukoplakia Buccalis and Cancer, New England J. Med. **212**: 7-9 (Jan. 3) 1935.

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Hückels's[5] 12 cases did cancer develop, although all the patients were over 50 years of age. In his study of tumors of the palate, Hayes Martin[13] expressed his belief that while the larger lesions in palatal leukoplakia usually show papillomatous overgrowth of the epithelium and are common in pipe smokers, such changes are rarely associated with cancer, and there is little statistical evidence to indicate that they have any great importance from the standpoint of carcinogenesis.

SUMMARY

The manifestations of leukoplakia on the palate are not always similar to those on the tongue or buccal mucosa.

Papular leukoplakia of the palate has not been generally recognized in this country, and some of the earlier cases were reported under other diagnoses.

Undoubtedly the condition would be observed oftener if routine examinations of the palate were made, and it would be recognized more frequently if physicians and dentists were familiar with this clinical variant of leukoplakia.

The papular form presents a striking clinical picture. In this form there are gray flat-topped papules or red hemispheric papules.

The histologic observations include thickening of the epithelium with hyperkeratosis and dyskeratosis; elongation and thickening of the rete pegs, usually accompanied with capillary enlargement in the papillary bodies, and a moderate degree of inflammatory change in the dermis.

Practically all reported instances have been in men, almost all of whom have been smokers, especially pipe smokers. Syphilis does not seem to be a causative factor.

The condition has been cleared up in some cases merely by abstaining from smoking, while in others a protective denture covering the palate has been effective.

The prognosis is good, since in none of the relatively small number of recorded cases has malignant change developed.

The Tendon Fascicle.—The unit of tendon structure is the tendon fascicle. This consists of closely packed collagen fibers with their parent cells, the fascicles being bound together by a layer of fine connective tissue, the interfascicular tissue or endotenon. The cross sectional area of the fascicle is variable but lies within certain limits (0.125-0.375 sq. mm.). The interfascicular tissue is probably largely nutritional in function, and the characteristic limits to the area of the fascicle is probably related to nutritional requirements. The interfascicular tissue may also be compared with the packing of a laminated spring and facilitates internal movement of the tendon. Where it has no synovial sheath the tendon is surrounded by loose fatty areolar tissue, the paratenon, which fills the interstices of the fascial compartment in which the tendon is situated. In the simplest form of musculotendinous junction the muscle fibers are continued as collagen bundles, and each group of muscle fibers enclosed in perimysium continues as a tendon fascicle, the perimysium being continuous with the interfascicular tissue. Where the muscle fibers join the tendon obliquely this arrangement does not always hold, but there is a close correspondence between the grouping into bundles of muscle fibers and the grouping into tendon fascicles. At its insertion, the tendon becomes intimately connected with the bone and periosteum. The majority of the collagen fibers of the tendon are continued into the bone as the perforating fibers of Sharpey, and the interfascicular tissue becomes continuous with the periosteum.—Edwards, D. A. W.: The Blood Supply and Lymphatic Drainage of Tendone, *Journal of Anatomy*, July 1946.

MANAGEMENT OF PATIENTS WITH CHRONIC HEADACHE

ARNOLD P. FRIEDMAN, M.D.
CHARLES BRENNER, M.D.
and
H. HOUSTON MERRITT, M.D.
New York

Patients with chronic headache represent a considerable problem to the practitioner both because of their numbers and because of the stubbornness with which their symptoms often persist despite every effort at treatment. It is our purpose in this paper to outline some principles in the study and care of such patients which will help to achieve the best therapeutic results.

The great majority of all patients with chronic headache fall into one of the three following groups: migrainous, post-traumatic or psychogenic. The first two need no further definition here. In the third group we include patients whose headaches are found to be related to emotional stress, the relationship being seen either at once or after some study. These patients are without evidence of any organic disease which might be causally related to the headaches. They are chiefly women who have usually had headaches for many years, of either the acute, recurrent or the continuous, chronic type. The location and character of the headaches are variable, and there may be premonitory symptoms, such as photophobia, nausea or dimness of vision. In nearly all the women patients, the headaches are worse before or during menses.

The mechanism of all three of these types of headache is probably vascular. In the case of migraine, the pain is considered to be caused by paroxysmal dilatation chiefly of the intracranial branches of the external carotid artery. We have discussed the mechanism of post-traumatic and psychogenic headache in earlier papers[1] and have suggested that it may be similar to that of the headache which can be produced experimentally by the intravenous injection of a small amount of histamine, that is, to stimulation of the pain-sensitive structures in or near the walls of the large intracranial arteries by forcible vasodilatation. We wish to emphasize that there is no evidence at present that either of these two types of headache is caused by histamine sensitivity or by any other disorder of histamine metabolism.

Regardless of the precise mechanism of the production of pain in these three disorders, there is abundant clinical experience to prove that all three types of headache are readily precipitated and made worse by emotional stress and inner conflicts. It is of the greatest importance to bear in mind this apparent but often neglected fact when one is first examining and later treating a patient with chronic headache. If any one fails to do so, he must pay the price of his neglect ultimately in the form of less satisfactory therapeutic results.

Every patient with chronic headache should, of course, be given a thorough physical and neurologic

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From the Division of Neuropsychiatry, Montefiore Hospital, and the Department of Neurology, College of Physicians and Surgeons, Columbia University, New York.

Read before the Section on Nervous and Mental Diseases at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

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examination. In our clinic roentgenologic examination of the skull and electroencephalograms are also routine; certainly these and other laboratory studies should be done whenever indicated. However, it is just as important, in accordance with what we have said in the preceding paragraph, that the patient be studied adequately from a psychiatric point of view. Chronic headache is truly a psychosomatic problem, and neither the psychologic nor the physical aspect can be neglected with impunity. The initial interview in which the patient's history is obtained is the time to begin the psychiatric examination and a detailed account of the present illness is of the utmost importance. Only by inquiring into the precise circumstances of the patient's illness can one learn, for example, that a 60 year old patient had her first headache at precisely the moment of her reconciliation with her elderly husband who had acquired a mistress while the patient was away from home visiting a married daughter.

Attention should be paid both to the subject organization, which gives a cross section of the patient's present difficulty, and to the personality organization and past history, which give a longitudinal section of the life of the patient and an indication of his adaptation to past difficulties. The examiner should be on the alert to determine what factors in the patient's inner life and environment precipitate the headaches and, if possible, to form an opinion as to the dynamics which are involved. On the basis of such a psychosomatic study, a diagnosis can usually be reached and a decision made as to further treatment.

A word of warning might be added here against diagnosing a headache as psychogenic purely on the basis of the patient's description of the distribution and character of the pain. The fallacy of assuming that a headache is psychogenic simply because it is described as a pressure sensation or as being viselike or of hat band distribution is illustrated by the following case.

REPORT OF A CASE

CASE 1.—A. O., a white female nurse, age 22 years, had been suffering from headaches for two months. These were described as consisting of a feeling of pressure throughout the head or in one or another part of it. They were occasionally accompanied by nausea or even vomiting and were usually relieved by acetylsalicylic acid. Two days before entry into the hospital, the headache grew worse, and the patient felt tired and listless. During the recent, severe headaches, the patient screamed at times, was emotionally upset and even seemed confused but if she was spoken to she could always be roused and brought into contact. When the history was taken it was learned that she was dissatisfied with her present job, and that she had left her previous, congenial one just before the onset of her headaches. She lived with her family and was under considerable emotional tension, both because she disliked her stepfather and because the other members of her family disapproved of her fiancé.

Physical and neurologic examinations were negative except for questionable blurring of the disk margins. Roentgenograms of the skull and lumbar puncture did not reveal any abnormality. An electroencephalogram was diffusely abnormal, more on the left than on the right. Since visual field studies showed enlargement of the blind spots, a pneumoencephalogram was attempted, but the ventricles failed to fill. A ventriculogram then revealed dilatation of the entire ventricular system, and at operation a medulloblastoma was removed from the left cerebellar hemisphere.

As a diagnostic aid in the examination of patients who complained of headache at the time of the examination, we have recently practiced the simple procedure of local infiltration of the scalp with procaine hydrochloride (1 or 2 per cent) or isotonic solution of sodium chloride. This procedure usually brought relief within a few minutes after injection of either solution when carried out on patients with psychogenic headaches but patients with headaches due to migraine or cerebral tumor were not relieved. It was interesting also that in the patients who did experience relief an injection on one side of the scalp generally relieved the headache in that half of the head, and a subsequent injection on the other side relieved the rest of the ache. These results can be explained only by the assumption that the relief experienced was purely on the basis of suggestion, and it is interesting to note that the patients with psychogenic headaches were uniformly much more suggestible than those of the other two groups tested. A lasting therapeutic effect was not obtained by the procedure in any patient, and its only value, in our opinion, would be as a roughly reliable diagnostic guide in patients who present themselves to the physician for the first time with an acute headache.

Like the investigation of the patient with chronic headache, the treatment should be twofold: pharmacotherapy and psychotherapy. As the former is the more familiar, we may conveniently begin with it.

In the treatment of migraine, derivatives of ergotamine are generally accepted as the medication of choice. As is well known, these drugs are useful only in relieving an acute attack. The commonest cause for failure to achieve satisfactory relief is the use of too small a dose of medication, and for this reason it is important to administer the full therapeutic dose of whatever preparation is used. In our experience we have found that the relief afforded by ergotamine derivatives is often considerably enhanced by the addition of a dose of one of the short acting barbiturates at the beginning of the attack.

For the relief of a post-traumatic or psychogenic headache the most satisfactory medication is one of the usual analgesics (salicylates or acetophenetidin), to which may be added caffeine and one of the short or medium acting barbiturates. The use of codeine or other narcotics is contraindicated for obvious reasons.

Endocrine therapy has been recommended by many authors for various types of headache. Eight of our patients with menstrual or premenstrual headaches were given testosterone propionate (30 to 100 mg. in divided doses both orally and intramuscularly) with considerable improvement in 2, moderate improvement in 3 and no improvement in 3.

Twenty-four patients were treated with beta dimethylaminoethyl benzhydryl ether hydrochloride (Benadryl) in oral doses up to 200 mg. daily. Five of these patients had migraine, and 19 had psychogenic headaches. Each of the patients with migraine and psychogenic headaches reported doubtful relief, but none of the others noted any improvement at all.

Octin mucate (2-methyl-6-methylaminoheptene-[2]) has recently been recommended for patients with migraine.[2] We have given it to five patients in oral doses of 4 to 6 grains daily. Four patients did not experience relief. The other was improved, but as the improvement coincided with her husband's return from service, it is difficult to know whether to attribute the therapeutic success to the medication or not. A new ergotamine derivative, D.H.E.-45 (dihydroergotamine), has recently been reported to be superior to ergotamine itself in the treatment of migraine.[3] In our experience the results with D.H.E.-45 seem about equal to those with ergotamine. We have had no success in treating migraine with hapamine (a chemical combination of histamine and despeciated horse serum globulin), nicotinic acid, nicotinamide, thiamine chloride, estrogenic substances or caffeine.

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[2] Palmer, H. D.: Migraine Headache, Clinics 4: 531 (Aug.) 1945.

It has been our experience that a combination of psychotherapy and drug therapy is much more effective than the latter alone in reducing the frequency, duration and severity of any of the three types of headache which we are discussing. Indeed in the majority of these patients medication is chiefly of value in relieving the discomfort of the acute attack, and it is only by reducing the amount of mental stress to which the patient is subjected that the headaches can be reduced in frequency and severity and often rendered easier to control by suitable medication when they do occur.

To achieve such a result is not equally easy in every case, nor must the means employed be uniformly the same. The psychologic problems vary greatly from patient to patient. In some they may be largely the result of an unfavorable environmental situation which must be changed for improvement to result. In others the difficulty is primarily in the inner life of the patient, with the result that he cannot adjust adequately even to the usual demands of his daily life. Advice as to mental hygiene, reassurance and the opportunity to ventilate his anxieties and conflicts are psychotherapeutic aids which are within the province of the practitioner and which in favorable cases will result in good therapeutic results. In other cases in which the patient's mental difficulties are more severe or more deeply repressed and hence less accessible to therapeutic influence, it seems best to refer the patient to a specialist. We would emphasize, however, that there is at least a large group of these patients who will respond satisfactorily to the type of psychotherapy described, which is well within the province of the general practitioner.

Two cases will serve to illustrate the symptomatic improvement that may follow the lessening of environmental stress in patients with headaches.

REPORT OF CASES

Case 2.—B. P., a 29 year old, married housewife, had suffered with migraine for nineteen years. During the eighteen months before her first visit, the attacks had been particularly frequent and incapacitating. They were preceded by scintillating scotomas and some blurring of vision in the left visual field, were accompanied by nausea and vomiting and were limited to the right side of the head. On examination she was found to have a homonymous defect of the left visual field, and for this reason she was hospitalized. Complete studies, including electroencephalogram and pneumoencephalogram, failed to show any evidence of an expanding intracranial lesion, and the final diagnosis was migraine, possibly with some vascular anomaly of the cerebral cortex. She had two headaches during the month after her discharge from the hospital and none during the two following months. It was learned that her husband had been drafted eighteen months before her first visit, at the time when her headaches began to get worse. During his absence she managed his small business, which was a constant source of strain and aggravation to her. She could recall many occasions when after a particularly aggravating episode in the store a headache had developed so severe that she had had to go home and go to bed. At the time of her entry into the hospital her husband was released from service and resumed operation of the business himself, so that when she left the hospital she was not only reunited with her husband but relieved of the necessity of working away from home.

Case 3.—H. G., a 62 year old widow, came to the hospital complaining of generalized headaches of over a year's duration, which had become so frequent and severe that she had been unable to work even part time during the four months before her visit. In the course of the initial interview, it became clear that the patient was extremely anxious about her only son, who was on hazardous duty in the Southwest Pacific. She was given an opportunity to air her anxieties at that and during the next visits. Physical and laboratory examinations did not reveal any abnormality, and she was placed on salicylates. To this medication she attributed the complete relief of her headaches, though in fact it was the advent of V-J day which was responsible for the striking therapeutic result. She has had no recurrence of her headaches, despite discontinuance of all medication and has been able to return to her old work. In her case the exacerbation of her symptoms during the last few months of the war were clearly related to the increasing anxiety for her son's safety as the hour for cessation of hostilities drew near.

The following report is a good example of a patient whose headaches were improved by simple psychotherapy, consisting chiefly of reassurance and an opportunity for him to discuss and air his anxieties about some relatively superficial problems.

Case 4.—G. Z., a 32 year old attorney, had been suffering from attacks of migraine since his graduation from law school, four years previous to examination. Nothing noteworthy was revealed on physical or neurologic examination. Ergotamine tartrate was helpful in controlling or alleviating the attacks, but even with its help the patient was not always successful in avoiding severe discomfort. After some study it was ascertained that the migraine headaches occurred most often the evening before the patient was to appear in court or on a Sunday when he did not do any work at all. It also became apparent in the course of successive visits that the patient exhibited considerable evidence of psychologic tension. After a period of psychotherapy and adjustment, the patient became able to attend court without precipitating an attack and to enjoy his holidays. The frequency of his attacks was markedly reduced, they became of shorter duration and were now invariably relieved by the use of ergotamine tartrate. This improvement lasted for fifteen weeks, following which his headaches again became more frequent. After some discussion, it was learned that his wife was nearly at term and that he had considerable anxiety about her prospective delivery. In the course of further interviews he was given opportunity to discuss his anxieties more fully and was reassured. Since that time, four months ago, he has been free from headaches.

A final example may serve to illustrate the difficulties which may be encountered in certain cases in trying to influence the unfavorable psychic constellations which are present.

Case 5.—N. T., a 26 year old business man, sought relief for recurrent, severe, bitemporal headaches since a minor head injury at the age of 11. He had been to many hospitals and physicians, and though he had always been told that there was nothing physically wrong with him, he had never been able to get relief from his headaches, which were often so severe that he had to leave his work and go home. In the course of a series of interviews, it became apparent that the patient had an intensely ambivalent attitude toward his father, with whom he was in close daily contact. Discussion of this relationship in a series of weekly interviews was accompanied by considerable diminution in the frequency and severity of the headaches, which after a lapse of four weeks in the treatment returned as severely as before. Because of the nature of the patient's conflict, intensive psychotherapy was advised, but it proved impossible to arrange this.

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[3] Horton, B. T.; Peters, G. A., and Blumenthal, L. S.: A New Product in the Treatment of Migraine: A Preliminary Report, Proc. Staff Meet., Mayo Clin. 20:241 (July 11) 1945.

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SUMMARY

1. Patients with migraine, post-traumatic and psychogenic headaches constitute the majority of all patients with chronic headache and represent a challenging therapeutic problem to the practitioner.

2. The mechanism of pain production is probably vascular in all three groups, and in each the headaches are readily precipitated and made worse by emotional stress and inner conflicts.

3. For this reason psychiatric study of the patient with chronic headache is as important as physical and laboratory examinations.

4. A new, simple, diagnostic procedure which is described is of service when the patient is seen during an acute attack of headache, and warning is issued against diagnosing headache as psychogenic on the basis of the distribution or character of the pain of which the patient complains.

5. For best results in treatment in most cases, psychotherapy is as important as drug therapy. Simple psychotherapy, such as lies within the province of the general practitioner, is often effective therapeutically. Such therapy is discussed briefly, as is drug therapy, and illustrative cases are cited.

ABSTRACT OF DISCUSSION

DR. CHARLES D. ARING, San Francisco: Headache probably is the symptom to which the flesh is most commonly heir. The populace receives relatively meager help in this disorder from the medical profession. We possibly are influenced more than we like to admit by the advertisements and have fallen in with suggestions that headache is amenable to whatever concoction pharmaceutical houses are otherwise unable to dispose of. Dr. Sullivan of New York some years ago exhibited a chart at one of the national meetings diagraming the good results reported by various authors for the multitude of drugs and manipulations used in treating headache. As I recall, it was demonstrated that almost anything may relieve attacks of headache in some 70 to 90 per cent of instances. Isn't it remarkable with all this relief floating about that the cures of headache are extraordinarily rare? Yet cure is within the accomplishment of many practitioners if they will follow the tenets outlined by Drs. Friedman, Brenner and Merritt. The only cure for headaches of emotional origin, which comprises about all of them, is psychotherapy, which is time and energy consuming and demands the best interests and intelligence of the practitioner of medicine. Resigned listening, awaiting the opportunity to interrupt will not do; nor will psychotherapy be successful in a single interview. It is only after several interviews with the understanding and informed physician that the patient may obtain some awareness of the mechanism of his headaches. When this occurs the road to recovery is no longer a thorny one. Diagnosis is always going to be knavish, and all of us are going to miss the occasional case of brain tumor or chronic malaria, particularly if we do not retain them in mind as possibilities, yet this will hardly justify the casualness with which we have handled this common problem in pain. While it is clear that vasodilatation, particularly of the external carotid system, is usually present during the pain of the migraine episode, it must never be lost sight of that the dangerous part of the syndrome is the preceding cerebral vasospasm, which may manifest itself by neurologic signs, the most common being scintillating scotoma and hemianopsia and numbness or tingling of one or both extremities of the same side. Less frequently one observes weakness and dysphasia, and sometimes weakness proceeds to a rather complete and not readily reversible hemiplegia. It is probably not widely known that people who have suffered from migraine most frequently die with cerebral softening. There is hardly any excuse for offering the public new substances which do not cure headache. It is reasonably safe to say that those drugs which we already have, including acetylsalicylic acid, properly and honestly exhibited will equal whatever preparations are brought forward.

DR. J. M. NIELSEN, Los Angeles: Dr. Friedman has been working with a certain group of patients. The outpatient department is usually the place to which ambulatory patients come, and usually the younger patients. When Dr. Friedman was working with us in Los Angeles in the wards of the General Hospital, where the patients are nearly all old, he had an entirely different source of headache, the so-called arteriosclerotic headache. Even in private practice among the aged we have that as a constant problem, and I do not think that we are dealing chiefly with migraine or chiefly with psychogenic cases. I have difficulty differentiating between migrainous and psychogenic headaches. After all, they work through exactly the same mechanism. I have a woman now who is highly intelligent, suffering with migraine. She had been diagnosed in Pittsburgh and had been successfully treated, but she said herself "My trouble is now, Doctor, that I wake up in the morning and say to myself 'I wonder if I am going to have another headache' and in about two minutes it begins. And if I never stop to think whether I am going to have one, then it doesn't come nearly as frequently." It seems to me that there are innumerable causes even of migraine. It is extremely difficult for me to delineate the syndrome. There is the case of the happily married woman who had no difficulty until a certain religious sect opened up a tent for an evangelistic revival in her city. She attended and became a convert. She tried to get her husband to go. They had considerable conflict, of course, but she became a convert and left her husband, joined the new sect and became an ardent worker. In this sect a vegetarian diet was compulsory, and she immediately went on a vegetarian diet. In three months she began to have what was considered a migraine headache. In a month she had another, in two weeks another, and by the time I saw her she had one every other day. I thought perhaps it was her acid-base balance that had been disturbed, but I could not put her back on meat; after all, her soul was more important. So I put her on diluted hydrochloric acid with each meal. She reported repeatedly for months back to the clinic and never had another headache. I have difficulty with the diagnosis. I think every case is a challenge, and I simply don't have any rule.

DR. SAMUEL B. HADDEN, Philadelphia: About seven years ago, under the title of "Neuralgic Headache and Facial Pain" (*Arch. Neurol. & Psychiat.* **43**:405 [Feb.] 1940) I reported headache similar to that which the authors have described. At that time I attributed most of these headaches to involvement of the occipital nerves in a fibrositis of the posterior neck and scalp muscles, but recognized that many of them were part of the symptom complex of a psychoneurosis. I reported that procaine was effective in giving prolonged as well as temporary relief. There is general agreement with the statement of the authors that the headache of migraine is on a vascular basis, but I do not believe that many of the headaches seen in the psychoneuroses are on such a basis. I feel that the headache of the psychoneurotic patient is more probably the result of the fatigue incident to tension and overacting scalp muscles. Many patients who suffer with this type of headache have discovered that periods of relaxation and gentle massage of the scalp muscles effect relief. In dealing with a large group of psychoneurotic servicemen, in whom headache was a frequent symptom, the puckering of the brow into a frown was so common that the group began to refer to those in this category as the "prune faced section." With instruction in how to relax, these patients were prone to experience prompt relief even early in the course of a program of psychotherapy. I would suggest that local heat, massage and instruction in the relaxing of the scalp and posterior neck muscles be considered as effective adjuncts to the symptomatic relief of these patients during their psychotherapy.

DR. WALTER FREEMAN, Washington, D. C.: I might as well take issue right from the start with Dr. Friedman and his colleagues and say that one of the best ways of relieving a migrainous headache is to inject a little procaine around the artery, whether it is temporal, occipital or frontal. Further-

Dr. Robert Heilig Library

more, in quite a number of cases my colleagues and I have secured permanent relief of migrainous headache by resection of a short piece of one of these arteries. It would be interesting in the psychogenic headaches, on the other hand, to have a test which would give some information concerning both the severity of the headache, the production of the headache and also the reaction of the patient to the headache. One of the most satisfactory tests to determine what sort of patient one has is to apply the Libman test for individual sensitivity to pain. That consists in pressing over the mastoid processes, which are insensitive, in order to accustom the patient to the idea of pressure, then bring the thumbs forward over the styloid processes, where pain should be felt by the normal person. There is a great deal of variation in individual sensitivity to pain. Dr. Libman pointed out that prize fighters can almost be lifted up by their styloid processes without producing pain. Others complain of pain the moment one presses on the mastoids a little bit. The second test I have found of value in these psychogenic headaches is the hyperventilation test. Often these headaches, so called, will be accompanied with symptoms such as dizziness, light headedness, coldness of the fingers and maybe palpitation, vertigo and dyspnea. Have you ever had a patient stand up and hyperventilate for one minute? You often see them contract their brows into the "prune face," and they will experience severe headache. If you stop the hyperventilation and have them attempt to hold the breath for a period of two minutes, the headache often disappears. Dr. Nielsen mentioned the value of hydrochloric acid in some of these cases. I think there must be some upset in the acid equilibrium on the emotion and hyperventilation basis that many of these patients show. The addition of hydrochloric acid or ammonium chloride to the intake of these patients is only a palliative measure; nevertheless, when one is dealing with a psychogenic headache for which the psychogenesis may not be appreciated by the patient or the situation may be incorrectible, sometimes a palliative remedy is satisfactory, and in this connection we have to remember that acetylsalicylic acid is a rather strong acid.

Dr. Matthew T. Moore, Philadelphia: From what has been offered by the authors, I fear there is too great a temptation, at times, to attribute a psychogenic etiology to many patients suffering from migraine in whom possible organic factors have not been fully investigated. At present I have a series of patients with a history of true and severe migraine who had been subjected to psychotherapy and prolonged psychoanalysis and who have been given various medicaments without avail. In these cases with hemicrania of long duration I have utilized the procedure, advocated by Watts and Freeman, of resecting a small segment of the temporal and supraorbital arteries, with very satisfactory results. Have the authors used this method, and if so what have the results been?

Dr. Foster Kennedy, New York: Being neuropsychiatrists, I suppose it is beneath our notice to realize that the primary ego is the gastrointestinal tract! In all this discussion I have not heard the word "constipation." One would hear it in internal medicine gatherings. Constipation is really the most common cause of prolonged headache: a simple idea, but one surely not to be forgotten. I have cured many headaches by reducing water intake. The idea of "forcing fluids" has been a ritual for fifty years on this continent. Every nurse says it in her sleep. The result is that patients think that by taking eight, ten or twelve glasses of water in a day, being nearer they think to cleanliness, they may be nearer too to godliness. By reducing fluids to 1 or 1½ quarts a day, one can frequently stop recurrent severe headache due to water balance chronically disturbed. Nor have I heard any one say anything of the allergic characteristics of migraine which must be considered in any general survey of this subject.

Dr. Arnold P. Friedman, New York: We thank the discussers for their interesting remarks. We agree with Dr. Aring and Dr. Nielsen regarding the importance of psychogenic factors in the production of migraine headaches. In answer to Dr. Hadden's questions, we also use a certain amount of physical therapy in the form of warm baths and comfortable support for the head during a headache. Our experiments with procaine injection seem to indicate that suggestion is the most important factor in producing relief from headache by such injection. In our opinion the essential thing to treat in these patients is the underlying anxiety and emotional tension. Dr. Freeman's suggestions are interesting. Not being neurosurgeons, we have not resected any arteries ourselves. However, we have had opportunity to observe several cases in which this has been done, and in these the therapeutic results were not always as gratifying as in the ones Dr. Freeman has just reported. Dr. Moore's remarks about the importance of organic factors are well taken. Each patient coming to us was given a careful physical and neurologic examination, routine laboratory studies and in most cases x-rays of the skull and an electroencephalogram. Dr. Kennedy of course has had tremendous experience in treating these cases. So far we have not been impressed by the importance of allergy, constipation or water retention in most cases of chronic headache. The patients whom we have tried on salt poor diets with low fluid intake have had no relief from their headaches as a result of this regimen. The majority of persons whom we have tested show a positive test for histamine regardless of their susceptibility to chronic headaches. As is well known, histamine sensitivity is not a true allergic phenomenon

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INSULIN IN THE TREATMENT OF DIABETES MELLITUS

LESTER J. PALMER, M.D.
Seattle

In this year, 1946, the twenty-fifth anniversary of the great discovery by Banting and Best, it is fitting to summarize the majority opinion and the present policies of the large diabetic clinics of the nation in regard to the use of insulin in the treatment of diabetes mellitus. In this paper I shall present a summary of the information on this subject which I have obtained through personal and written contact with the many diabetic clinics of America, including the one with which I am associated.

It should give this audience great confidence in the basic soundness of the present conception of the correct use of available insulins to know that the information from these many sources indicates a remarkable uniformity of policy.

THE HISTORY OF INSULIN

It would be negligent to omit from a discourse such as this a few brief remarks on the history of insulin. Banting and Best completed the animal experiments and established proof that insulin lowered the blood sugar concentration and diminished the glycosuria in diabetic dogs, in the autumn of 1921. Insulin was first administered to a human diabetic, a boy aged 15, at the University of Toronto in January 1922. Collip furnished the plan and Eli Lilly and Company, in collaboration with others, contributed extensively to the production of insulin on a commercial basis. This original insulin became available to the medical profession in January 1923 and to the public six months later.

From the Mason Clinic, Virginia Mason Hospital.

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Personal communications to the author were received from Elliott P. Joslin, Howard F. Root, and Priscilla White, of Boston; Russell M. Wilder, Randall G. Sprague, Samuel F. Haines, Edwin J. Kepler and Edward H. Rynearson, Rochester, Minn.; Franklin B. Peck, Indianapolis; R. T. Woodyatt, Chicago; W. D. Sansum, Santa Barbara, Calif.; Cyril M. MacBryde, Los Angeles; James E. Paullin, Atlanta, Ga.; J. W. Conn, Ann Arbor, Mich.; H. Clare Shepardson, San Francisco; Cecil Striker, Cincinnati; Joseph H. Barach, Pittsburgh; Edward S. Dillon, Philadelphia; Frederick W. Williams, New York; Henry J. John, Cleveland; Howard F. West, Los Angeles, and Blair Holcomb, Portland, Ore.

An arbitrary standard unit was defined early; it was soon increased by about 50 per cent. The method of standardizing fresh productions of insulin and the definition of the unit have been changed several times since 1923. The last change was made in 1942, when the last Pharmacopeia of the United States (U. S. P. XII) published the currently employed standard. Potency is now expressed in U. S. P. insulin units, which are equivalent in potency to the unit declared on the label of the container of this standard which is furnished for comparative purposes by the U. S. P. Committee.

Amorphous, or regular, insulin of approximately current unit strength remained the only available commercial insulin until 1937. The need for long-acting insulin was evident for many years before it became available. The cases of mild diabetes characterized by spontaneous normal fasting blood sugar had never been a difficult problem. The abnormal postprandial rise of blood sugar and glycosuria in this group, if not corrected by a minimal yet adequate diet, was easily controlled by one or two injections of quick-acting original insulin. But the cases of severe diabetes with a distinct tendency to a nocturnal rise of blood sugar constituted a problem calling for a long-acting insulin, of which a single injection each twenty-four hours would be effective in controlling this feature.

Thus, in 1935, the search for such an insulin was consummated by the development by Hagedorn of protamine insulin. This was later perfected as protamine zinc insulin by the Toronto group and, after clinical trial, became available commercially in February 1937. Eighteen months later, in August 1938, solution of zinc insulin crystals, commonly known as crystalline insulin, became available commercially.

Most recently globin insulin with zinc has been marketed by two manufacturers. It acts more quickly than protamine zinc insulin and less rapidly than regular or crystalline insulin; its action persists longer than that of regular or crystalline insulin but definitely for a shorter period than that of protamine zinc insulin. It produces its peak effect in about eight hours and expends about 80 per cent of its total effect in the first twelve hours.

For the most part, it was developed at Columbia University and, although highly acclaimed by certain clinics, it is considered an unnecessary insulin by most clinics. It has few, if any, attributes not possessed by the other insulins, when they are used either singly or in combination. It lacks the ability to produce therapeutic results comparable to those obtained by combinations of the other insulins, and this weakness is particularly manifest in patients requiring over 30 to 40 units per day.

AVAILABLE INSULINS

Regardless of the kinds of insulin now available or which may become available, and of whatever method of applying them to the treatment of diabetes in man is to be accepted as most logical and rational, the pharmacologic action and the method of application must accord with current knowledge of the disordered physiology characteristic of the disease and must be consistent with the experience gained from the treatment of diabetes with insulin during the past twenty-five years.

Diabetes may be produced experimentally in animals by three methods: subtotal pancreatectomy, the administration of large quantities of crude pituitary extract, and the administration of alloxan. Regardless of the method employed, the result is a loss of ability to produce sufficient insulin to meet the demand of normal metabolism. Again, whether there is a full acceptance of the overproduction or underutilization theory of diabetes, all concerned are willing to accept without question the fact that extraneous insulin administered parenterally controls the clinical symptoms of the disease, and causes glycosuria to disappear and glycemia to approach normal.

There are available now for treatment against diabetes two principal types of insulin: (1) quick-acting–short-acting insulin, namely—either amorphous (or regular) insulin or solution of zinc insulin crystals, known as crystalline zinc insulin; and (2) slow-acting–long-acting insulin, namely—protamine zinc insulin.

HOW MANY DIABETICS REQUIRE INSULIN?

Most estimates state that the number of persons known to have diabetes in the United States today approaches 1 million. At least one half of this number at large are using insulin, and among those patients seen in diabetic centers or clinics the percentage of users is as high as 85 per cent. It seems likely that many of the 50 per cent who are not using insulin today should be using it with consequential benefit. Estimates indicate that perhaps somewhat less than 50 per cent of the total known cases of diabetes today may be controlled, for the time being at least, without insulin on a diet adequate from all nutritional points of view but necessarily at a minimum calorie level. The remainder of the group require insulin for control. Of these about one-half may be controlled on protamine zinc insulin alone.

The average total daily dose of insulin is about 40 units. Many patients require less, and seldom is there need for as much as 100 units a day. The Mayo Clinic reports indicate that total pancreatectomy in man creates a demand for about 40 units of extraneous insulin per day.

ONE OR BOTH KINDS OF INSULIN?

Although protamine zinc insulin is a remarkable insulin and fills many long felt needs, it has definite shortcomings. Approximately 60 per cent of the effect of any dose of protamine zinc insulin is released in the first twelve to fourteen hours after injection. Therefore, it is always injected before the first meal of the day. This is logical, since the greater part of the effect of the dose is thus exerted during the hours when food is taken. The total practical dose, however, must be based on the blood sugar levels during the second twelve to fourteen hours after injection. This dose must not exceed the amount which produces a blood sugar level that approaches normal but does not reach reactionary levels during the night and before breakfast. A sugar-free, or nearly sugar-free urine during these hours is a desired objective. Because of this pharmacologic characteristic of protamine zinc insulin, in only about one half of those diabetic persons who require extraneous supplementary insulin can the disease be satisfactorily controlled on this insulin alone. When the total insulin dosage exceeds 30 or at most 40 units it will be found that the amount of insulin which satisfactorily controls the blood sugar level at night fails to meet the demands for extraneous insulin during the day. As a result, blood sugar levels during the day exceed those considered desirable for good control, and excessive glycosuria results. To meet this situation, it is necessary to add to the regimen an appropriate amount of quick-acting insulin administered at the same time as protamine zinc insulin. Most clinics prefer crystalline insulin for this purpose.

ROUTINE MANAGEMENT

Many tables are available to enable the physician to prescribe a diet based on the ideal weight, which takes into consideration the basal calorie requirement plus calories for activity. The most commonly employed diet supplies 40 per cent (or somewhat less) of the calories as carbohydrate, 15 per cent as protein and 45 per cent (or somewhat more) as fat. This distribution will insure adequate vitamins, minerals, bulk and fluid. Begin treatment with the basal requirement or less and gradually increase the diet to the maintenance level. If one must err in prescribing the diet, either on the side of undernutrition or overnutrition, slight undernutrition is safer. This principle, enunciated by Allen in 1915, still holds.

The decision on whether or not to employ insulin at the beginning of treatment will be based on the severity and duration of symptoms, the degree of hyperglycemia and glycosuria and, finally, on the judgment and experience of the physician. Some will try response to diet alone at first. Early use of insulin will, however, bring about prompter control, permit earlier use of adequate diets and insure practical instruction in the use of insulin, which should be a part of the knowledge of every diabetic person. Of course, acidosis and complications always require insulin, and rarely should one attempt to treat diabetic children without insulin.

In the routine care of diabetes in which insulin is used, protamine zinc insulin is the primary or fundamental insulin, always given only once a day and before breakfast. The maximum dose which may be safely used is indicated by the fasting blood sugar level and/or the presence or absence of sugar in that specimen of urine which has not been in the bladder more than thirty to forty minutes before breakfast. It is safe to start with 10 units and increase 5 or 10 units every twenty-four to forty-eight hours until the fasting urine is sugar-free. Experience may indicate a higher starting dosage. It is universally observed in diabetic clinics that when the total insulin requirement exceeds 30 or at the most 40 units, it becomes necessary to supplement the effect of protamine zinc insulin with quick-acting insulin to counteract daytime hyperglycemia or glycosuria. Further increase of the protamine zinc insulin alone usually results in night-time hypoglycemia even though the daytime glycosuria is ultimately controlled. Routinely this supplemental quick-acting insulin is given as a separate injection at the same hour as the protamine zinc form. The amount required is oftenest about 1 unit of crystalline insulin to 2 units of protamine zinc insulin. The ratio may be less or occasionally greater than 1:2.

It may be necessary during the early period of use of supplementary insulin to use additional doses before lunch or supper, but in a short period of time these additional doses may be stopped. Experience may enable the physician to select those patients in whom the use of crystalline insulin with protamine zinc insulin at the start of treatment will shorten the time required to bring the diabetes under control.

It is ideal and helpful to have access to laboratories for blood chemistry, even in the routine care of diabetes, but it is not essential. There should be a greater number of accessible laboratories, but exceedingly efficient care can be based on urinalyses alone, employing single specimens, twenty-four hour collections and fractional collections.

Rather promptly after treatment is instituted there is frequently observed a sharp drop in the insulin requirement, especially if the diagnosis has been made early. The physician should not be influenced by this observation to suspend the use of insulin too quickly, even when this seems possible; continued rest of the island of Langerhans cells through the use of insulin early in the course of treatment may prevent some of the ultimate atrophy that leads to a future increase in the degree of insulin deficiency. Usually during the first year of treatment the insulin requirement will rise after the initial drop and then stabilize for a considerable period of time.

INSULIN DURING COMPLICATIONS

During complications, specifically infection, injuries, surgical procedures, acidosis and pregnancy, additional insulin is almost always required. This additional insulin should be the quick-acting type and should be given as separate injections every six hours. It is emphasized that this is additional insulin; that is, it is in addition to what the patient is currently taking, whether that be no insulin, protamine zinc insulin alone, or protamine zinc plus quick-acting insulin. This additional insulin is best given in an additional number of injections.

Infections and Injuries.—In the presence of infection, mild or severe, the basic insulin arrangement is not changed, but additional quick-acting insulin is given every six hours as indicated on the basis of the urinalyses. Injuries usually increase the insulin requirement, and changes in insulin administration are made in the same manner.

Surgical Procedures.—Although some authorities prefer to continue, during the operative and postoperative period, the amount of protamine zinc insulin usually taken by the patient, it is my opinion that the uncertainty of gastric feeding makes it safer to suspend the administration of protamine zinc insulin during this period. I prefer to use only quick-acting insulin every four to six hours, as indicated by the results of a urinalysis or by the blood sugar determination. A solution of dextrose in the amount of 125 to 150 Gm. per twenty-four hours is administered.

The surgeon dictates how long intravenous administration is to be continued and when oral feeding is to begin. Also, he decides when the type of food is to be changed from liquid to soft or from these foods to full diet. The internist should order all fluids during the postoperative period, the quantity to be decided by the surgeon and internist.

It is my practice to give 25 Gm. of quick-carbohydrate together with 25 per cent of the total number of units of insulin usually taken, as crystalline insulin, three hours before surgery and to divide the balance of the usual dose of insulin into equal amounts to be administered before each 1,000 cc. of 5 per cent dextrose solution which is given during the first twenty-four hours. During subsequent days the dosage may be based on four to six hour urinalyses as first mentioned, or the total amount to be given may be divided arbitrarily into equal amounts administered before each intravenous glucose or oral feeding. To a considerable degree, during that period when glucose is being given intravenously the insulin requirement will be controlled by the judgment of the physician based on his experience with surgical diabetic patients and by his knowledge of the individual patient. This is so because urinalyses and even blood sugar determinations are rather unreliable under such conditions.

Near the end of the postoperative period and before discharge, control of the diabetes is again adjusted with protamine zinc insulin alone, or with protamine zinc plus crystalline insulin if necessary.

Pregnancy.—Insulin has made conception common among diabetic women. Insulin has increased considerably the percentage of successful terminations of pregnancy. There are many who still believe that good diabetic control throughout pregnancy is the most important factor in success. An increasing number of authorities, however, feel that substitutional hormone therapy is necessary to attain 90 per cent fetal survival as reported by White.[1] Increasing clinical evidence supports this opinion.

The insulin requirement during pregnancy may rise, fall or remain fairly constant. The usual insulin regimen followed by the patient will apply when diabetes exists before the onset of pregnancy. When diabetes develops during pregnancy the usual methods of instituting the use of insulin, as previously outlined under routine management, are to be employed.

To even a greater degree than usual the use of insulin during pregnancy must be distinctly individualized. The urine test during pregnancy is definitely unreliable as a guide to dosage because of the lowering of the renal threshold for dextrose. Therefore, to intelligently direct insulin dosage during pregnancy blood sugar determinations as often as bi-weekly are almost essential. Sufficient insulin to produce complete aglycosuria almost invariably results in reactions.

During pregnancy, protamine zinc insulin remains the basic form, and if control is not accomplished with this insulin alone, supplementary crystalline insulin is added to the regimen. In the absence of complications it is seldom necessary to give more than one injection of each type of insulin a day.

At delivery, the insulin arrangement will depend on the method of delivery. Spontaneous labor represents active exercise, and frequently not only less insulin but additional carbohydrate is necessary. If delivery is to be accomplished by cesarean section, insulin arrangement is comparable to that employed during any surgical procedure. Barnes and I[2] prefer to suspend the use of protamine zinc insulin and use only crystalline insulin every four to six hours as indicated.

Immediately after delivery there is a sharp reduction in the insulin requirement, regardless of intravenous or oral feeding. Frequently little or no insulin is required for twenty-four to as long as seventy-two hours. This is true even when the daily dose of insulin before delivery has been as much as from 50 to 60 units. Insulin must be administered cautiously during this period.

Coma.—Insulin is the specific remedy in diabetic coma. Fluids and salt are necessary but not specific. The disordered metabolism of fat is in control of the organism during severe acidosis and coma, and recovery depends on a shift to the metabolism of carbohydrate. Only insulin will accomplish this.

A word of caution before the initiation of treatment is necessary: Be certain of the diagnosis of diabetic coma; additional insulin administered to a patient in severe insulin shock may be a lethal act. It is safest to have laboratory support of clinical evidence. Glycosuria with ketonuria in an unconscious patient does not always indicate diabetic coma. Before large doses of insulin are given, blood sugar and carbon dioxide combining power levels in the blood should, if at all possible, be determined. Coma is truly an emergency, requiring hospitalization whenever available.

As soon as diagnosis is certain, the first insulin is to be given at once. The insulin given in the first hour of observation is at least several times as effective as that given three or four hours later.

The total insulin required to correct diabetic coma may vary from less than 100 units to as much as 2,000 or more units. The amount of both the initial dosage and the total dosage is greater in proportion to: the duration of the diabetes; the amount of insulin used regularly; the duration of the acidosis, and the degree of seriousness of the complication. Although some authorities employ an initial dose of protamine zinc insulin in coma, I discourage this practice. It is too slow-acting for any emergency, and quick-acting insulin must be employed, regardless; once a large dose of protamine zinc insulin is given, the physician has lost control of insulin dosage for twenty-four hours, and, lastly, it may lull one into a false sense of security during a critical perod when prompt and sufficient insulin effect is essential.

This initial dose of quick-acting insulin varies from 20 to 40 units and from this amount up to 100 units. The average patient will receive 40 units subcutaneously. Knowledge of the patient and judgment based on experience may justify larger doses, as much as 100 units, especially when the degree of coma is pronounced, when shock is present and when blood sugar levels are high and carbon dioxide levels in the blood are low. Children require smaller fractional and total dosage than adults. When conditions are urgent, one-half the initial dose may be given intravenously.

Insulin must then be repeated every thirty to sixty minutes subcutaneously in appropriate dosage, guided by clinical and laboratory evidence of response, until the patient has recovered.

In the opinion of most authorities, and of myself as well, it is unnecessary, harmful and illogical to give dextrose to a patient in coma until there is evidence that sugar already in the tissues is being oxidized. This will be indicated by clinical improvement, a falling blood sugar level, a decreasing glycosuria and a rising level of carbon dioxide combining power. Most authorities prohibit the use of dextrose by vein or mouth until the urine is practically sugar-free.

Some clinics employ alkaline intravenous solutions in the treatment of coma; most clinics do not. Those who do use them, reserve them for patients in diabetic coma of decided severity and for times when the carbon dioxide combining power is low and is slow to rise toward normal. Although a few authorities consider alkaline intravenous solutions harmful, most authorities believe that they are harmless but nearly always unnecessary. Again, it should be repeated that insulin is the specific.

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[1] White, P.; Titus, R. S.; Joslin, E. P., and Hunt, H.: Prediction and Prevention of Late Pregnancy Accidents in Diabetes, Am. J. M. Sc. **198**: 482-492 (Oct.) 1939.

[2] Palmer, L. J., and Barnes, R. H.: Pregnancy in the Diabetic, West. J. Surg. **53**: 195-202 (June) 1945.

Two important points should be emphasized. Coma is a continuous emergency. Remain with the patient continuously to direct the dose of insulin and other therapeutic measures until clinical recovery occurs, and watch the patient closely for twenty-four hours longer. A relapse into coma may occur if treatment is discontinued too soon. Because of the overlapping effect of previous dosage, a sharp reduction in the amount of insulin to be administered is necessary for as long as twenty-four hours after recovery from the coma is complete.

Edema and the Insulin Requirement.—The insulin requirement is altered in the presence of edema. In the presence particularly of congestive heart failure blood sugar levels usually fall, and insulin requirement drops. The physician, although he takes cognizance of this fact, should not be deceived but should watch for the return of higher insulin requirement when compensation is restored.

THE INSULIN REACTION

The seriousness of insulin reactions is probably overrated. If a half million diabetic persons take insulin each day, the percentage of accidents and possible deaths is extremely low. Patients should be taught the significance of regular meals, early recognition of the symptoms or reaction and the importance of prompt treatment. *It is dangerous to allow a patient to remain* in hypoglycemia long, and it is doubly dangerous to administer insulin to an already hypoglycemic patient. In case of reaction, give dextrose early; continue it until the symptoms have been relieved and, if the patient has been unconscious from hypoglycemia for a long time, administer small amounts of carbohydrate continuously until recovery is complete.

THE INSULIN SYRINGE

Brief comment in regard to the insulin syringe is necessary. Insulin should always be measured in a syringe intended only for insulin. There are far too many types of insulin syringes available commercially. The dose of any kind or strength of insulin should be measured only on a scale intended for that particular strength. That is, 40 unit on a 40 unit scale and 80 unit on an 80 unit scale. Some physicians prefer a universal type of scale on the syringe used for measuring insulin. On such a scale, any strength of insulin may be measured with minimum chance of error. This syringe is a 1 cc. or possibly a 2 cc. syringe graduated into divisions of 0.01 cc. each. It is hoped that the American Diabetes Association will endorse and recommend an official insulin syringe.

MORE RECENT METHOD OF USING INSULIN

During the past two or more years a method of mixing crystalline insulin and protamine zinc insulin in the same syringe or in a bottle prior to administration has been given a trial. The comment regarding mixtures in this paper refers to those mixtures where the two insulins are thoroughly mixed, one with the other, either in the syringe or in a sterile bottle. Peck[3] and Colwell[4] have published the most comprehensive studies. The feasibility of mixtures is based on the fact that standard protamine zinc insulin contains a definite amount of unsaturated protamine. When crystalline or regular insulin is added to protamine zinc insulin this unsaturated protamine combines with the insulin up to the point of saturation. When more than sufficient crystalline to complete saturation is added to the protamine form, uncombined crystalline insulin remains in the mixture in varying amounts, depending on the proportions of the mixture. Nothing less than equal parts is logical. The most commonly employed proportion is the 2:1 mixture (two parts crystalline to one part protamine zinc insulin), although the proportions may be adjusted to the particular needs of the patient. Thus, it may be found that 3:1, 3:2, 4:3 or 5:3 is best suited to a given patient. This variation of the proportions employed in a mixture creates a flexibility which permits a more or less tailor-made pharmacologic adjustment of the insulins to the individual patient, if such fine adjustment is desirable. Of course, the p_H and the zinc content of a mixture differ from those of standard protamine zinc insulin. There is a difference of opinion as to whether or not the insulin effect of a mixture differs from that which would be obtained by administering crystalline and protamine zinc insulin separately in doses computed to give equal effect.

My experience with mixtures used by 156 adult and 72 juvenile patients with diabetes during the past two years leads me to believe that the disease of 25 to 35 per cent of those who require both short-acting and long-acting insulin is better controlled on a mixture than on separate injections; in 25 per cent of the patients on mixtures, the disease is better controlled when the insulin mixture is prepared in a bottle in an amount sufficient for periods of two or three weeks than when there is fresh daily preparation of the mixture in a syringe; 2 parts crystalline to 1 part protamine zinc insulin was the most commonly employed proportion.

Mixtures are definitely on trial and in many large clinics are used only in a small group of especially selected cases or not at all. However, in other large clinics they have been given extensive trial and are held in considerable favor, and in these clinics mixtures are employed at present in the treatment of 50 per cent or more of the patients using insulin. I believe that mixtures will be employed more extensively in the future. As larger groups of statistics become available, a greater appreciation of the advantages of insulin mixtures in the treatment of properly selected patients will be created.

WILL THERE BE NEW INSULINS?

Whereas regular or crystalline insulin, alone or combined with protamine zinc insulin as separate injections or in a mixture, are now in use almost exclusively in diabetic clinics, there is hope and further search for a more satisfactory type of long-acting insulin. It would be an ideal situation if there was one insulin to meet all needs. This goal will probably never be reached because of the variation in 1 diabetic patient as compared to another, and because of the variation in any person with diabetes from time to time. However, any development of a long-acting insulin which would make it possible for more than the present percentage of insulin users to use one insulin once a day would be a distinct step forward. MacBryde[5] has probably had the most extensive experience with such insulins in the form of modifications of the present protamine zinc insulin formula. He has found that a buffered combination which contains less protamine than standard protamine zinc insulin and is known as modified protamine zinc insulin, NP-50, is the most promising. He has based his opinion on his own extensive experience and on the replies to a questionnaire which he, as chairman of the Insulin Committee of the American Diabetes Association, sent to thirteen diabetic clinics. Colwell is of the opinion that the standard protamine zinc insulin could advantageously be replaced with a long-acting insulin represented by a formula which would produce the clinical effects observed in use of the 2:1 mixture.

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[3] Peck, F. B., and Schechter, J. S.: Newer Insulin Mixtures; Follow-Up Study, Proc. Am. Diabetes A. (1944) 4: 57-86, 1945.

[4] Colwell, A. R.: Nature and Time Action of Modifications of Protamine Zinc Insulin, Arch. Int. Med. 74: 331-345 (Nov.) 1944.

These are problems of clinical and manufacturing research, and when an insulin which is more satisfactory for a greater proportion of diabetics is perfected, the Toronto Insulin Committe will endorse it.

DEFINITION OF THE CRITERIA OF, AND THE NECESSITY FOR, CONTROL[6]

Much of what has been said in regard to the use of insulin is related to two questions: First, what is meant by "control of diabetes" and what criteria of control are medical practitioners willing to accept; second, is control in the defined sense necessary?

The best reason, it seems to me, for considering as acceptable any criteria of control (approach, at least, to normal blood sugar levels at all times), is that the more nearly the blood chemistry of the diabetic person is restored to normal the more normal the metabolism and the more adequate nutrition will be. Second, is control in the defined sense really necessary? It seems to me that statistics extending over many years of careful observation answer this question as well as it can be answered today. They indicate that if a sufficiently large group of diabetic patients are observed over a sufficiently long period, those whose disease is controlled in accordance with aforementioned criteria suffer less degenerative damage due to their diabetes than do those whose disease is not so managed. It will definitely advance the treatment of diabetes when specific criteria of control are standardized and universally accepted as the yardstick of effective treatment.

Finally, I wish to stress the necessity for the meticulous control of mild and early cases of diabetes, a policy which is not too conscientiously applied either by patient or physician at present. Most practitioners believe that it is only by exacting care of the mild case that there can be prevented or at least retarded the progression from mild to more serious degrees of diabetes. Use insulin too early rather than too late.

1115 Terry Avenue.

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[5] MacBryde, C. M., and Reiss, R. S.: Modified Protamine Zinc Insulin: Comparison with Globin Zinc Insulin and Insulin Mixtures, J. Clin. Endocrinol. 4:469-479 (Oct.) 1944.

[6] Criteria of control: (1) To keep the urine as continuously sugar-free as possible without insulin reactions, and (2) to maintain these blood sugar levels: fasting, not less than 100 nor more than 140 mg. per hundred cubic centimeters, before lunch, not less than 100 nor more than 120 mg per hundred cubic centimeters; two to three hours after lunch, not over 200 mg. per hundred cubic centimeters.

THE ROLE OF DDT IN CONTROLLING INSECT-BORNE DISEASES OF MAN

COLONEL WILLIAM S. STONE
Medical Corps, Army of the United States

In reviewing the diseases of mankind one is impressed by the number of major infections that are transmitted by insects. It is apparent that the most prominent of those diseases are the dysenteries, malaria, the rickettsial diseases in the typhus group, plague, leishmaniasis, trypanosomiasis of Africa and of the Americas, filariasis, pappataci sandfly fever; dengue, encephalitis and encephalomyelitis, possibly poliomyelitis, and a number of other diseases of lesser importance. It is also evident that the causes of these diseases include bacterial, protozoal, nematode, rickettsial and virus agents. The transmitting processes include mechanical transfer as well as complicated intermediate development and propagation of the infectious agent in the insect vector.

This percursory review indicates the importance of controlling or eliminating certain insects in the prevention of human diseases. The United States is fortunate in that it is geographically located where most serious insect-borne diseases have seasonal interference with their transmission and also in that it possesses sufficient resources to allow man to wage a successful and incessant war on harmful and pest insects. While these conditions prevail in the United States, commitments of the armed forces require them to operate in many places throughout the world and far removed from the protected environment which has been developed at home. For these reasons the Medical Department of the Army has had a primary interest in the development of better ways to control insect-borne diseases. Early in 1941 in anticipation of the disease problem that would be encountered, this interest, backed by financial support, material and experienced personnel, led to the formation of an efficient team for the study of insect-borne diseases and the development of practical means for their control. At the Army's request, the Bureau of Entomology, U. S. Department of Agriculture, in conjunction with the Food and Drug Administration and the National Institute of Health, U. S. Public Health Service, began a systematic search for better insecticides and for more effective means to employ those already available. Field tests of promising products were made by the Army, the Navy and Rockefeller Foundation. These studies were coordinated by the National Research Council and later supported by the Committee on Medical Research of the Office of Scientific Research and Development. This combination of talent made it possible to screen a large number of insecticides and repellents, to select the more promising, to determine their toxicology, to explore the feasibility of their manufacture for military or civilian use and within a relatively short period of time to make adequate field tests of the selected products. Subsequent events have proved the worth of this approach to the problems of insect-borne disease. The nation now has within its grasp not only means to effectively control louse and flea-borne typhus fevers and the fly transmissions of the dysenteries but also improved methods for controlling malaria, leishmaniasis, dengue, pappataci fever and filariasis. Progress has been made in controlling mite-borne diseases, and a lead has been obtained on how to control plague. There must be a continuation and extension of these efforts, and soon it should be possible for human beings to live in all parts of the earth without fear of insect-borne diseases.

In the past it has been possible to control insects only in a limited way. This was due to the fact that when nonpersistent agents are employed it is necessary to repeat insecticidal work at intervals of not over five to seven days in order to destroy newly emerged broods that were not affected by previous work. In attempting to control or eliminate an insect from the environment, it is necessary to have a persistent insecticide. If the agent is nonpersistent, then persistency must be simulated by frequency of application. This method of attack not only kills the adult insects and larvae already present but also is a constant destructive agent for subsequently emerging adults, nymphs or larvae.

Early studies made by the Bureau of Entomology, U. S. Department of Agriculture, attempted to solve this problem by the use of antioxidants to stabilize pyrethrum preparations, the use of activators to increase the rate of kill and to decrease the lethal dose, the addition of more stable chemicals, such as rotenone and the thiocyanates These efforts were partially successful and antilouse powders were produced with insecticide persistency up to fourteen days if applied as a dust and up to three months if high concentrations were impregnated into a fabric. Less persistency of contact insecticidal action was obtained in other fields.

These results were considered a promising but not a satisfactory answer, consequently the search was continued. This ultimately led to the examination of the compound now commonly known as DDT (4,4′-dichlorodiphenyltrichloroethane). It was first synthesized by a German chemist in 1874 and was patented as an insecticide in Germany in 1934 It is a crystalline white solid with a tendency to agglomerate and cling to a surface As ordinarily obtained it is tasteless and possesses a faint aromatic odor of chlorbenzine. It is insoluble in water but soluble in oils and certain organic solvents. It is relatively stable chemically in the presence of light, heat and moisture.

In 1939, J R. Geigy, Inc. of Basle, Switzerland investigated its insecticidal properties for the control of clothes moths and certain agriculture pests. They also noted some of its residual insecticidal action after its application to a surface. During December of 1942 and early in 1943, studies conducted at the Bureau of Entomology, U. S. Department of Agriculture Laboratory at Orlando, Fla., confirmed the Swiss work and extended the information on the use of DDT as an insecticide with long lasting residual effect. This information was immediately applied to the development of materials and methods for the control of lice, mosquitoes, flies, fleas, sandflies, mites, bedbugs, cockroaches, clothes moths and many other insects of economic importance. Its limitations in the control of ticks and other arachnids were soon discovered.

As little work had been done on the toxicology of DDT for man and animals, extensive work had to be completed prior to its adoption by the armed forces. By June 1943 the Food and Drug Administration, the National Institute of Health and the Kettering Laboratory, University of Cincinnati, were able to supply sufficient information on the toxicology of the preparation to allow the armed forces to request its manufacture in large quantity. This was indeed fortunate, for with the world shortage of pyrethrum there was great need of a good insecticide. The principal ingredients required for its manufacture were alcohol and chlorbenzine. These items, although on the critical list, were available in quantity in the United States. Subsequently, sufficient DDT was manufactured, distributed and utilized by the armed forces to aid in the control of typhus fever in Europe, Africa, Japan and Korea, and of malaria in the Pacific, Mediterranean, African, Indian and Caribbean areas, as well as to contribute to the control of the dysenteries, dengue, sandfly fever and other insect-borne diseases encountered by U. S. troops. The materials and methods developed are applicable to civilian as well as military use. Thus the necessity of war has contributed materially to peacetime living.

In using DDT as an insecticide, it must be remembered that it is slow to act, with a knockdown varying from a few minutes to more than one hour; most insects showing evidence of DDT poisoning die, and its chief advantage over other insecticides is that on proper application to a surface it continues to be a potent contact insecticide for as long as three or four months. This latter property obviously has great significance in any insect control program.

Various means have been devised to apply DDT. These include oily sprays using solvents, such as kerosene; dusts utilizing inert diluents, such as talc; aerosols using gas under pressure for their formation; water emulsions made from a solution of 20 per cent DDT dissolved in a proprietary formaldehyde-containing soft soap plus a wetting agent; and wettable DDT sprayed from a water suspension. The object of all methods of application is to leave a residue on the sprayed area, and good insect control should not be expected unless the user adheres to this principle.

For the control of adult flies a residue of 100 to 200 mg. per square foot should be applied to surfaces where flies commonly rest, such as the sides of buildings, walls and screens. Such a residue is obtained when a 5 per cent DDT solution in kerosene is applied in a coarse spray to a surface in the amount that makes wetting evident. This same method of application is useful in the control of mosquito-borne diseases transmitted from man to man. The mosquito taking a blood feed usually rests on a nearby wall prior to or after the blood feed. Contact with a DDT-sprayed wall for twenty seconds to two minutes is usually sufficient for the insect to absorb fatal amounts of the compound.

DDT's value in the control of louse-borne typhus fever is due to the fact that when a dust or emulsion of it is applied to clothing that is not subsequently washed, it remains as an effective insecticide for a period of at least one month. Adult lice or nymphs are soon killed, and any lice that subsequently hatch or are picked up from other sources meet the same fate. Because of the ease of application and the long continued action, it is feasible to reduce the louse infestation of large populations to levels where typhus fever will not be transmitted. Because of its slow knockdown for lice, it is not recommended for treatment against crab lice and head lice. A combination of DDT and pyrethrums should be used for this purpose. Fleas can be controlled in human environments with the same methods utilized for lice if, in addition, the floors, including rugs, of all human habitations involved are sprayed with DDT. This procedure has great promise in the control of plague.

Sandflies can be controlled by a residual spray applied around the windows and doors of buildings. This acts as a lethal barrier for sandflies attempting to enter a building. For pest insects, such as the cockroach and bedbug, DDT gives the best control that has been obtained to date. This is due to the long lasting residual effect which continues to kill emerging nymphs that subsequently hatch from previously deposited eggs. This latter factor has been responsible for most of the failures with other types of insecticides.

With the demonstrable great toxicity of DDT for many species of insects, it should be obvious that toxicity for mammals would also exist. Nevertheless, in spite of its extensive use as an insecticide, no clear-cut cases of human poisoning due to DDT have been seen in the United States. Dr. Paul A. Neal of the National Institute of Health has expressed the opinion that in cases studied to date the toxic manifestations have been due to the solvent and not to the DDT itself. He emphasized that symptoms produced by solvents, either locally or systemically, set in rather promptly, whereas those symptoms produced by DDT develop only after a latent period of several hours.

An idea of the relative toxicity of DDT for laboratory animals can be gained from the fact that the lethal oral dose in olive oil varies from 240 mg. per kilogram of body weight for rats and 300 mg. for cats and rabbits to over 1,000 mg. for goats. Due to differences in the absorption and fat content of the animal, there is considerable variation in the size of the lethal dose for individual animals within a species. Young animals have been found to have increased susceptibility.

DDT in the form of a dry powder is nonirritating and apparently not absorbed through the skin, and its absorption in the gastrointestinal tract is variable, depending on the presence of fats or other solvents. It is capable of slow absorption through the skin if applied in oily solution. Animals that tend to lick themselves may get increased absorption by the ingestion of DDT materials applied to the fur or skin.

The symptomatology manifested by animals suffering from experimental DDT poisoning is characterized by hyperexcitability, nervousness, tremors, chronic convulsions and coma. The site of action in mammals appears to be in the central nervous system. The type of convulsion encountered in acute DDT poisoning resembles that seen in strychnine poisoning, in that it can be elicited by irritation and mechanical stimuli such as jarring. In sublethal amounts recovery is usually complete without residuums, and there appears to be no important lasting damage to any body tissue or organ. In both animals and man the organic chlorides of the urine have been found to be increased subsequent to the ingestion of DDT. The Division of Pharmacology, Food and Drug Administration, and the U. S. Department of Agriculture have shown that DDT is partially stored in the fats of the body and is gradually eliminated in bile, feces and urine in the form of 2,2 bis (p-chlorophenyl) acetic acid or other metabolites. It is also excreted in the milk, which may be of significance if DDT is used as an insecticide on forage crops. It must be pointed out that with reasonable agricultural control the likelihood of anyone ingesting toxic amounts of contaminating DDT are extremely small, and that dangers from DDT are probably much less than those from nicotine sulfate, arsenical insecticides, sodium fluoride or solvents such as carbon tetrachloride. In spite of this fact, it is extremely wise to be fully informed about the toxicology of DDT, so that maximum use can be made of this fine insecticide. The fund of knowledge on the toxicology of DDT is unique in that most of it was worked out before the product was released as an insecticide for the armed forces and the general public.

There is no specific antidote for DDT poisoning, but the use of phenobarbital has been extremely helpful in controlling DDT convulsions occurring in experimental animals. It is fortunate that toxicology studies of DDT have and are paralleling investigations on its insecticidal properties in all fields of insect control. The work of the Bureau of Entomology, U. S. Department of Agriculture, the Food and Drug Administration, the Public Health Service, The Fish and Wild Life Bureau of the Department of the Interior and the Chemical Warfare Service Laboratories at Edgewood Arsenal, Maryland, coupled with contracts and field work of the Medical Department, the Quartermaster Corps and the Corps of Engineers, the U. S. Army, the U. S. Navy and various civil agencies, have and are still adding to the store of information needed to properly exploit DDT for man's benefit.

CONCLUSION

From the data available on DDT (4,4′-dichlorodiphenyltrichloroethane), the following conclusions may be drawn:

1. Its outstanding property is that in proper concentration, in a dispersed state, it continues to be a potent contact insecticide for several months.

2. It is a weapon of major importance which can be used to solve many problems of insect control.

3. It is relatively safe from the toxicologic point of view, and cases of DDT poisoning in human beings are not likely to occur when it is used as a household insecticide.

PORPHYRIA WITH EPIDERMOLYSIS BULLOSA

Report of a Case of the Tardive Congenital Type with Demonstration of Latent Porphyria in a Sister of the Patient

LOUIS A. BRUNSTING, M.D.
and
HAROLD L. MASON, Ph.D.
Rochester, Minn.

Bullous eruptions simulating epidermolysis bullosa, in which the exposed surfaces are sensitive to light, occur in association with porphyria and may represent the presenting symptoms of the disorder. Turner and Obermayer[1] described such a case of epidermolysis bullosa, with melanosis and hypertrichosis as well, and in a detailed survey of the literature and a discussion of the chemistry of the problem, listed 14 similar cases. They also reviewed 200 cases of hydroa and found that in 86 instances of the more severe type, hydroa vacciniforme, there was associated porphyria.

Porphyria is recognized as that rare, familial, metabolic fault in which abnormal kinds and amounts of porphyrins, especially uroporphyrin, are excreted in the urine and feces. The disease may be latent or asymptomatic for years, with or without the characteristic coloration of the urine. Surveys of families in which porphyria occurs may disclose the presence of uropor-

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From the Section on Dermatology and Syphilology (Dr. Brunsting) and from the Division of Biochemistry (Dr. Mason), Mayo Clinic.

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[1] Turner, W. J., and Obermayer, M. E.: Studies on Porphyria: II. A Case of Porphyria Accompanied with Epidermolysis Bullosa, Hypertrichosis and Melanosis, Arch. Dermat. & Syph. **37**: 549-572 (April) 1938.

phyrin or the colorless porphobilinogen in the urine of apparently normal persons. Porphyria finds clinical expression in various forms: The acute type with intermittent episodes of serious gastrointestinal or nervous symptoms; the congenital type, which may begin in earliest childhood with red urine, erythrodontia, photosensitive skin and sometimes visceral complications, and intermediate types, which may belong to one or the other. For a general review of porphyrins the reader is referred to comprehensive discourses on the subject.[2] Reports indicate that the syndrome of acute porphyria is more common than is generally supposed.[3]

It was in the investigation of the classic case of congenital porphyria of Petry that Fischer[4] in 1915 established the groundwork of our present knowledge of porphyrins. He found that the urine and feces contained porphyrins which were distinct from hematoporphyrin; the urinary porphyrin he named uroporphyrin, the fecal porphyrin, coproporphyrin. These compounds exist in nature in the form of isomers I and III, the identification of which depends chiefly on the determination of the melting points of their respective methyl esters. The porphyrin isolated from the urine by Waldenström, and probably erroneously identified as uroporphyrin III, predominates in cases of acute porphyria; much of it is present as the zinc complex.[5] In cases of acute porphyria, in the active or latent phase, porphobilinogen can be demonstrated in the urine by a simple test.[6] Uroporphyrin I has chiefly been identified with cases of congenital porphyria, and porphobilinogen is absent. Such distinctions are not clear-cut, however, for exceptions occur; in view of the recent work of Watson and his collaborators[7] it is doubtful that the type of clinical manifestation is dependent on the type of isomer excreted in the urine or feces.

Sensitivity to light occurs more commonly in the congenital types of porphyria than in other types. Waldenström[2b] emphasized that in his extensive experience with acute porphyria in Scandinavians he had not encountered any instances of congenital porphyria and while, in his cases, pigmentation frequently occurred, there had been no instance of photosensitivity. He reviewed the observations of others on cases in which bullous eruptions and abdominal colic appeared in conjunction with porphyria and concluded that they were examples of the congenital type which he termed "porphyria cutanea tarda." The cases presented by Merkelbach[8] and, recently, by Taylor and his associates,[9] in which bullous reactions simulating epidermolysis bullosa occurred in association with abdominal colics, suggest the syndrome of acute porphyria although porphobilinogen was not recognized in the urine, and the type of uroporphyrin was not identified.

Nesbitt and Watkins[3b] reported an instance of photosensitivity of the bullous and urticarial type in the case of a young woman 20 years of age who had classic symptoms of acute porphyria, abdominal pains, jaundice and psychotic behavior. The urine revealed large amounts of coproporphyrin and uroporphyrin, the latter largely as the zinc complex. Tests of the blood gave strongly positive reactions for porphyrins. Death occurred two years later, and at necropsy there was found extensive degeneration of the liver with decided pigmentation of the Kupffer cells, as well as a gross pinkish tinting of the costal cartilages.[10]

The recent literature on light-sensitive eruptions has been summarized by Epstein[11] in 1939 and by Stokes and Beerman[12] in 1942. In the chapter on photosensitization by porphyrins in Blum's[13] excellent monograph on "Photodynamic Action and Diseases Caused by Light," the author reviewed the many attempts that have been made to reproduce by artificial means the cutaneous lesions of hydroa and epidermolysis bullosa. Except for a few equivocal exceptions, these experiments have been unsuccessful. Various explanations have been offered to account for these failures. Hydroa and epidermolysis bullosa, with or without porphyria, possess a number of factors in common, one of which is the sensitivity of the skin to trauma. It has been suggested that either the porphyrins may affect such altered skin to make it sensitive to light or there may be an indirect effect due to light itself. Even in cases of pronounced porphyrinuria there may be few or no demonstrable porphyrins in the blood stream, and the skin may remain unaffected. Granted that there is a certain correlation between bullous eruptions, photosensitivity and porphyria in animals and in man, still it is not proved that the production of bullae on the exposed surfaces is due to the photodynamic action of porphyrins in the skin.

Little is known concerning the factors which may precipitate the syndrome of porphyria or influence its course one way or the other. In most instances of acute toxic porphyria, drugs of the sulfonmethane type have been incriminated. In diseases of the liver, such as cirrhosis or after poisoning caused by lead or by chronic alcoholism the excretion of porphyrins is decidedly increased in the urine and feces.[14] Attempts have been made to treat porphyria by the use of liver extracts, but these have not given convincing results.

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[2] (*a*) Mason, V. R.; Courville, C. B., and Ziskind, E.: Porphyrins in Human Disease, Medicine **12:** 355-439 (Dec.) 1933. (*b*) Waldenström, J.: Studien über porphyrie, Acta med. Scandinav. (supp.) **82:** 1-254, 1937. (*c*) Watson, C. J.: The Porphyrins and Their Relation to Disease: Porphyria, in Christian, H. A.: Oxford Medicine, New York, Oxford University Press, 1938, vol. 4, pt. 2, chap. 9 A, pp. 1-34. Dobriner, K., and Rhoads, C. P.: The Porphyrins in Health and Disease, Physiol. Rev. **20:** 416-468 (July) 1940. Watson, C. J.: Porphyria, South. M. J. **36:** 359-363 (May) 1943.

[3] (*a*) Turner, W. J.: Studies on Porphyria: III. Acute Idiopathic Porphyria, Arch. Int. Med. **61:** 762-773 (May) 1938. Chandler, F. G.; Harrison, G. A., and Rimington, C.: Clinical Porphyrinuria, with Report of a Case of the Acute Idiopathic Type, Brit. M. J. **2:** 1173-1180 (Dec. 16) 1939. (*b*) Nesbitt, S., and Watkins, C. H.: Acute Porphyria, Am. J. M. Sc. **203:** 74-83 (Jan.) 1942. (*c*) Nesbitt, S.: Acute Porphyria, J. A. M. A. **124:** 286-294 (Jan. 29) 1944.

[4] Fischer, H., cited by Turner and Obermayer.[1]

[5] Watson, C. J., and Schwartz, S.: The Excretion of Zinc Uroporphyrin in Idiopathic Porphyria, J. Clin. Investigation **20:** 440-441 (July) 1941.

[6] Watson, C. J., and Schwartz, S.: A Simple Test for Urinary Porphobilinogen, Proc. Soc. Exper. Biol. & Med. **47:** 393-394 (June) 1941.

[7] (*a*) Grinstein, M.; Schwartz, S., and Watson, C. J.: Studies of the Uroporphyrins: I. The Purification of Uroporphyrin I and the Nature of Waldenström's Uroporphyrin, as Isolated from Porphyrin Material, J. Biol. Chem. **157:** 323-344 (Jan.) 1945. (*b*) Watson, C. J.; Schwartz, S., and Hawkinson, V.: Studies of the Uroporphyrins: II. Further Studies of the Porphyrins of the Urine, Feces, Bile and Liver in Cases of Porphyria, with Particular Reference to a Waldenström Type Porphyrin Behaving as an Entity on the Tswett Column, J. Biol. Chem. **157:** 345-361 (Jan.) 1945.

[8] Merkelbach, O.: Porphyrie I (cutane und abdominelle Form), Schweiz. med. Wchnschr. **73:** 1182-1184, 1943.

[9] Taylor, I. J.; Solomon, M. L.; Weiland, G. S., and Figge, F. H. J.: Chronic Porphyria, J. A. M. A. **131:** 26-29 (May 4) 1946.

[10] Berg, M.: Acute Porphyria: Clinical and Pathologic Observations, Arch. Int. Med. **76:** 335-340 (Nov.-Dec.) 1945.

[11] Epstein, S.: Allergische Lichtdermatosen, Dermatologica **80:** 291-320, 1939.

[12] Stokes, J. H., and Beerman, H.: Photodynamic Effects in Dermatology: I. Am. J. M. Sc. **203:** 608-623 (April) 1942; Photodynamic Effects in Dermatology: II., ibid. **204:** 601-624 (Oct.) 1942.

[13] Blum, H. F.: Photodynamic Action and Diseases Caused by Light, New York, Reinhold Publishing Company, 1941, pp. 211-238.

[14] Nesbitt, S.: A Quantitative and Qualitative Study of Porphyrin Metabolism: I. Introduction; II. Porphyrin Excretion in Hepatic Disease; III. a Study of Acute Porphyria; Presentation of Three Cases, Thesis, Graduate School, University of Minnesota, Minneapolis, September 1940.

Dobriner and his associates[15] reported a quantitative reduction in the excretion of coproporphyrin in 3 children with congenital porphyria who were given such therapy.

In this paper we wish to report a case of epidermolysis bullosa, melanosis and hypertrichosis in association with porphyria, presumably of the congenital type, in which the tardive cutaneous reactions appeared late in life as the presenting symptoms of the disorder. Latent porphyria was demonstrated in the case of the patient's sister, who was apparently normal in other respects.

REPORT OF CASE

A woman aged 58 was admitted to the Mayo Clinic on Nov. 3, 1944 because of a decline in health and vigor over a period of eighteen months. During this time there had been a loss of 40 to 50 pounds (18.1 to 22.7 Kg.). In the spring of 1943, a blistering eruption had appeared on the exposed surfaces of the hands and the ankles, and this had persisted off and on until the time of admission. It was particularly pronounced after exposure to the bright summer sunlight.

Previous to the present illness, the patient's general health had been good. Both parents were dead. Three brothers had died of tuberculosis and one of ulcers of the stomach; one sister was living and well. The patient had been married twenty-five years, and there were four children living and well. In 1916 the left ovary and tube and the appendix had been removed. Four years prior to admission, the menopause had occurred without incident.

(Subsequent information was obtained in regard to the past history of the patient. She had been subject to spells of depression and for some years had imbibed considerable quantities of alcohol.)

In February 1943 it was observed that the skin of the dorsa of the hands, the forearms and the dorsa of the feet and ankles would blister readily under slight trauma, a condition which was aggravated by exposure to the sun throughout the next several months. Always of fair complexion, the patient had noted a gradual darkening of the color of the skin, most intense on the exposed portions of the face and neck. About the same time, she became aware of a downy growth of hair on the cheeks and upper lip, and bristles appeared on the chin. On the dorsa of the hands, patches of whitish decoloration appeared, and there were accumulations of small, yellowish white particles under the surface of the skin.

In May 1944, subsequent to a short period of dizziness, there was observed a transient weakness of the right arm. There was occasional tenderness of the smaller joints of the hands and fingers and of the right ankle.

During the eighteen months previous to admission, there had been an increasing sensation of fatigue, anorexia and a sensation of rapid aging. The weight dropped from a normal level of approximately 168 pounds (76.2 Kg.) to a low level of 117 pounds (53.1 Kg.) in December 1943.

The patient was under observation in the clinic on three occasions, in November 1944, in April 1945 and in November 1945. The general physical examination did not reveal significant abnormalities except in the smaller joints of the hands and in the skin. The cardiovascular system was apparently normal; the blood pressure was 124 mm. of mercury systolic and 88 diastolic. Neither the liver nor the spleen could be palpated. Pelvic examination revealed no pathologic conditions.

The scleras were slightly injected and tinted a faint yellow color. Ocular fundi revealed normal disks; the retinal arterioles were narrowed slightly. The mouth was edentulous. The tongue was normal.

On first inspection, the features indicated a person older than the stated age. The hair was streaked with gray; there was general hyperpigmentation; the skin of the face and neck was somewhat purplish in hue and thickened in texture, and the normal markings were exaggerated. There was a downy fuzz on the skin of the cheeks and upper lip; over the chin there was a scattering of stiff bristles. The smaller joints of the hands were stiffened and the right hand could not be closed. There was some disability in movement of the right wrist, and there was a slight swelling of the left ankle. The skin on the dorsa of the hands showed a mild degree of vitiligo, and there was a scattering of milia over the knuckles. On the dorsa of the hands and feet there were remnants of large, denuded vesicles, not associated with erythema. Friction on the adjacent skin provoked a positive Nikolsky sign. There were a few small unruptured vesicles as well as excoriations on the ankles.

The preliminary laboratory tests were as follows: The routine urinalysis showed no significant abnormalities. The concentration of hemoglobin was 14.2 Gm. per hundred cubic centimeters of blood; erythrocytes numbered 4,490,000 and leukocytes 8,100 and 7,200 respectively per cubic millimeter of blood. The Kline flocculation reaction for syphilis was negative. A roentgenogram of the thorax revealed no abnormalities. Roentgenograms of both wrists and both hands disclosed no evidence of arthritis, but there was a mild degree of osteoporosis. The concentrations of urea and uric acid in the blood were normal. The sedimentation rate of the erythrocytes by the Westergren method was normal. The basal metabolic rate was —6 per cent. Examination of the stools did not reveal parasites or ova. Examination of the liver by the sulfobromophthalein test showed a mild degree of retention of dye, graded 1 (on a basis of 1 to 4, in which 1 designates the least and 4 the greatest retention). The serum contained 0.8 mg. of indirect bilirubin per hundred cubic centimeters; there was no direct reaction.

Preliminary diagnostic considerations centered about the possibility of subacute disseminated lupus erythematosus, dermatomyositis and epidermolysis bullosa. Because of the history of recurring bullae with trauma and of exposure to sunlight affecting the exposed surfaces of the extremities, the urine was examined for porphyrins. There was no previous intimation of discolored urine.

A twenty-four hour specimen of urine collected on Nov. 9, 1944, showed a reddish color which deepened on standing to a port wine hue. Tests for porphobilinogen were negative. There was strong primary fluorescence. The twenty-four hour specimen of urine, totaling 550 cc., contained 2.82 mg. of coproporphyrin, and 18.5 mg. of uroporphyrin. The ether-insoluble porphyrin showed absorption bands with maxima at 532 and 574 millimicrons, which are characteristic of uroporphyrin metal complex. Addition of hydrochloric acid caused these maxima to shift to 550 and 593 millimicrons. In 25 per cent solution of hydrochloric acid the maxima of uroporphyrin are given as 554 and 597 millimicrons.

The specimen of urine collected on Nov. 15, 1944 contained 2.0 mg. of coproporphyrin and 11.4 mg. of uroporphyrin. On Nov. 20 and Dec. 8, 1944 the urine was examined qualitatively. The color appeared normal. There was a definite but not a strong degree of fluorescence. The specimen of Dec. 8, 1944 was estimated to contain approximately 1 to 2 mg. of porphyrins.

The ether-insoluble porphyrin contained in the first specimen of urine was isolated and esterified, and the methyl ester was crystallized from chloroform-methanol. The first crop weighed 8.2 mg. A second small crop softened over a range of temperature and finally melted at about 210 C. A third crop of 0.48 mg. melted at 260 C. After recrystallization the first crop melted at 283-285 C. and was considered to be uroporphyrin I methyl ester. Grinstein, Schwartz and Watson[7a] gave a melting point of 284 C. for this ester.

Two stool specimens were examined and an ether-insoluble porphyrin (uroporphyrin) was isolated. The amount was too small for adequate purification. The melting point of the best crystals was about 210 C. Coproporphyrin appeared to be present in traces but could not be identified. A chloroform-soluble porphyrin was present, either deuteroporphyrin or protoporphyrin, or a combination of the two.

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[15] Dobriner, K.; Strain, W. H.; Guild, H., and Locallio, S. A.: The Excretion of Porphyrins in Congenital Porphyria, J. Clin. Investigation 17: 761-764 (Nov.) 1938.

A twenty-four hour specimen of urine was examined for 17-ketosteroids and found to contain 1.3 mg., well below the limits of normal. No porphyrins were detected in the blood serum; there was no methemoglobinemia.

At this time the patient's sister presented herself for discussion of the problem. She was in her middle fifties and had always been in excellent health. Her complexion was blond, her hair was white and she stated that the patient and she, until 1942, had been of similar complexion. The difference in appearance of the two sisters was striking. The urine of the sister was examined on Nov. 20, 1944. It was of normal color but possessed a strong degree of primary fluorescence; the test for porphobilinogen gave negative results. Coproporphyrin, 1.6 mg. was present, as was an ether-insoluble porphyrin in an amount too small for quantitative determination. The ether-insoluble porphyrin was concentrated by adsorption on superfiltrol, and its absorption in 25 per cent solution of hydrochloric acid was determined. Maximal bands of absorption were found at 552 and 593 millimicrons. It was possible to prepare and crystallize the ester of this small amount of porphyrin. The methyl ester melted at 271 C., a fact which indicated that it was largely uroporphyrin I. The amount was too small for further crystallization.

At a later date, the patient's daughter, an apparently healthy young woman in her twenties, presented herself for examination. A twenty-four hour specimen of urine was examined and found to, contain normal amounts of coproporphyrin, but there was no primary fluorescence. There was no evidence of porphobilinogen.

EXPERIMENTAL DETAILS OF THE ANALYSIS OF URINE AND FECES FOR PORPHYRINS

I. The Patient.—Urine: One twenty-four hour specimen of *urine was obtained with a volume of 550 cc. After addition* of 60 cc. of acetic acid, it was extracted three times with 250 cc. of ether. The urine residue was adjusted to p_H 3.7 and allowed to stand for three days. The porphyrin which precipitated was filtered out and dried on the filter paper. It was removed from the paper with pyridine, which was then evaporated in a stream of air. The residue was suspended in dry chloroform containing a little methanol and treated with an excess of diazomethane in ether. The porphyrin dissolved quickly, which indicated a rapid formation of the methyl ester. After being allowed to stand overnight, the solvents were evaporated on the steam bath, and the residue was recrystallized *from chloroform-methanol. The first crop of 8.2 mg.* melted at 275-285 C. After a second recrystallization it melted at 283-285 C. (corrected), which is the melting point of uroporphyrin I. The second crop was extremely small and melted at about 210 C. The third crop of 0.48 mg. melted at 260 C.

Stool: Two stool specimens were combined and treated with acetone. The stool was then extracted repeatedly with methanol containing hydrochloric acid. After removal of the methanol under reduced pressure, the aqueous residue was allowed to stand overnight. It was then diluted and extracted with chloroform, which removed most of the porphyrin. The aqueous residue was neutralized to Congo red with sodium acetate and extracted with ether. The porphyrin in the ether was taken into 1 per cent solution of hydrochloric acid, and the acid solution was extracted with chloroform which removed all the porphyrin. This fraction was not studied further. The acetone extract of the stool was evaporated to dryness. The residue was taken up in water and extracted with ether and acetic acid. The aqueous residue was combined with the aqueous solution *remaining after extraction* with chloroform and ether, and the p_H was adjusted to about 2.7. After the aqueous solution had stood overnight the precipitate was filtered out, dissolved in 5 per cent solution of hydrochloric acid and again precipitated. It was then dried and esterified with diazomethane. The methyl ester was extremely difficult to crystallize, but a few crystals were obtained which melted at about 210 C. The properties of *this fraction* indicated that it was uroporphyrin, but there was too little to permit identification of isomers.

II. The Patient's Sister.—Urine: One twenty-four hour specimen of normal colored urine was available. The porphyrins were adsorbed on superfiltrol after the addition of hydrochloric acid and then eluted with dilute ammonia. The eluate was acidified to litmus with acetic acid and 20 cc. more of glacial acetic acid was added. After extraction three times with an equal volume of ether, the aqueous residue was adjusted to p_H 3.7. Since no precipitate appeared on standing, the solution was acidified, and the porphyrin again was adsorbed on superfiltrol and eluted with 2.5 per cent solution of ammonia. This time a precipitate appeared after adjustment of the p_H to 3.7 and allowing the solution to stand overnight. It was filtered out on a small pad of infusorial earth. The pad was then washed with a few cubic centimeters of pyridine, which dissolved the porphyrin. The pyridine was removed in a stream of air. The residue was leached with dilute hydrochloric acid, which dissolved the porphyrin and left considerable brown material undissolved. Sodium acetate was added to the hydrochloric acid solution until Congo red paper gave a blue gray color. It was then extracted twice with ethyl acetate, which removed all the porphyrin, leaving most of the brown color in the aqueous phase. The ethyl acetate was extracted twice with 5 cc. of 25 per cent solution of hydrochloric acid. After neutralization to Congo red with sodium acetate, extraction with ether failed to remove any porphyrin from the aqueous phase. Hydrochloric acid was added until the solution gave a blue gray color with Congo red paper. The porphyrin was then extracted with ethyl acetate. The solvent was evaporated, and the residue was esterified with diazomethane. Recrystallization of the ester twice from chloroform-methanol gave a few crystals which melted at 271 C. Since this melting point is higher than that of the Waldenstrom porphyrin, it was considered to be indicative of slightly impure uroporphyrin I methyl ester.

FURTHER CLINICAL COURSE

Based on these observations, a diagnosis of porphyria was made. This was considered to account for the systemic symptoms and the changes in the skin, including the picture of pseudo epidermolysis bullosa with apparent photosensitivity, milia, melanosis and hypertrichosis. In view of the tinted scleras and the slight evidence of hepatic dysfunction, a program was instituted similar to that which is advised in the treatment of cirrhosis. A diet was prescribed which was high in caloric and vitamin content, high in protein and carbohydrates and low in fats. Vitamin supplement of the B complex was added.

Tests were made of the skin of the forearms and back to determine evidence of photosensitivity. The skin of the back and forearms was exposed to erythema doses of radiation from four sources, quartz mercury vapor lamp, carbon arc lamp, infra-red Mazda bulb and natural sun. Exposure was made directly and through filtration including ordinary window glass and four selective spectral filters.[16] The result of these experiments indicated no abnormal reaction to light except a mottling in the areas exposed to the infra-red source with a faint erythema of the skin with the B carbons. The patient was later given measures of physical therapy to the hands for the distress in the joints. On exposure to mild radiant heat there was no untoward reaction of the skin.

Reexamination of the patient in April 1945 indicated an *improvement of general health. The color of the face was* somewhat lighter, there was good appetite, and there had been a gain of weight to 134 pounds (60.8 Kg.). There had been no further blistering of the skin under trauma or after exposure to the sun.

Examination of the urine revealed 3.32 mg. of uroporphyrin in a twenty-four hour specimen. The sulfobromophthalein dye test for hepatic function showed no retention of the dye.

Reexamination in November 1945 showed a still further degree of improvement in the hue of the skin. There had been no further episodes of bullous eruption. Examination of the urine showed no porphobilinogen; there were 2.16 mg. of coproporphyrin and 9.4 mg. of uroporphyrin in a twenty-four hour specimen. A test for hepatic function showed no retention of the dye.

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[16] McLoughlin, C. J., and Krusen, F. H.: A Practical Skin Test for the Study of Photosensitivity, Proc. Staff Meet., Mayo Clin. **16**: 478-480 (July 23) 1941.

During the summer of 1945 there had developed episodes of mild, jacksonian-like attacks, involving first the lower extremities, and subsequently the right arm as well. At the same time, there were spells of transitory motor aphasia. Neurologic examination did not reveal any localizing signs to account for this disturbance. The blood pressure was normal; a roentgenogram of the skull was negative; the electroencephalogram revealed dysrhythmia. It was tentatively considered that the jacksonian episodes were on some obscure vascular basis, and a program of sedation was prescribed. Instead of barbiturates, the patient was given bromides by mouth, and a moderate degree of improvement ensued. In the course of several months on this regimen, the symptoms of jacksonian episodes improved, but there developed a transient episode of mental confusion and difficulty in walking, which was found to be on the basis of bromism.

COMMENT

Late in the course of the patient's examination, information came to us from an outside source that there had been a chronic overuse of alcohol for a number of years preceding the onset of the present illness. This was reflected in the evidence of disturbed hepatic function and decline in health and confirmed our decision to emphasize in the course of treatment those procedures which have been recommended for the protection of the liver in the management of hepatic cirrhosis.[17] Under this program there resulted amelioration of symptoms and improvement of the general health.

One may conjecture on the influence of alcoholism and hepatic dysfunction toward the precipitation of latent porphyria into the clinical phase of the disease, as in this case with symptoms of photosensitivity and epidermolysis bullosa, for the liver is concerned in the metabolism and excretion of porphyrins. Notwithstanding improvement of the general health of our patient, on several occasions during the course of a year a relatively large amount of uroporphyrin was found in the urine.

The predominance of uroporphyrin I and the absence of porphobilinogen, considered in the light of the symptoms reported, suggest strongly that this represents a case of congenital porphyria in which the disease had remained dormant until late in life. The presence of uroporphyrin I and increased amounts of coproporphyrin and the absence of porphobilinogen in the urine of the patient's sister, who exhibited no clinical symptoms of porphyria, support this view and bring out the familial aspects of the disease.

Failure to reproduce the cutaneous symptoms by exposure of the skin to artificial irradiation or by natural sunlight is consistent with the experience of other workers in this field.

SUMMARY

Cutaneous signs of epidermolysis bullosa, melanosis and hypertrichosis were the presenting symptoms in a case of porphyria, presumably of the tardive congenital type, occurring in a 58 year old woman who had hepatic dysfunction and a history of alcoholism. Latent porphyria was demonstrated in a sister of the patient. An ether-insoluble porphyrin identified as uroporphyrin I was recovered from the urine and, in small amounts, from the feces. Reactions of photosensitivity could not be artificially reproduced. The general health of the patient improved under an anticirrhotic regimen.

ABSTRACT OF DISCUSSION

Dr. Cleveland J. White, Chicago: The title of this excellent treatise with detailed case report is well chosen. While this paper leaves little for discussion, it does provoke a few clinical speculations. Porphyria is uncommon, but it behooves one to search more often for it, especially when such bullous lesions appear, especially on the exposed parts. This patient had bullous lesions; also the dorsal surfaces of the feet and ankles were affected. Their experiments with irradiation of various sources of ultraviolet rays producing no similar lesions shows that there may be additional factors besides the porphyrins of these types demonstrated to be the cause of the bullous lesions. These experiments, along with the findings of Blum and his associates, in hydroa vacciniforme show that the porphyrins apparently are not the photosensitizing agents involved in the production of skin lesions, as many previously thought was the case. It is known that the output of coproporphyrin type I is much increased in cirrhosis due to cinchophen, and similar drugs, also in hemolytic jaundice, pernicious anemia and congenital porphyrinuria. Type III is mainly increased in lead poisoning and in atropic and pigmentary cirrhosis of the liver. The supposed effect of uroporphyrin anuria in producing excessive sensitivity to light and producing skin lesions will have to be reevaluated. As well demonstrated, this is undoubtedly a case of congenital porphyria of the tardive type, the other two types having been well ruled out. An interesting feature, besides the epidermolysis bullosa type of lesions, is the presence of a widespread melanosis. It is rarely if ever seen in the congenital epidermolysis bullosa and was not found in a case recently studied. The association of hypertrichosis and melena is difficult to assay. I should like to ask Dr. Brunsting his opinion, whether he thinks they are incidental or probably a definite pair of this syndrome. The authors have further investigated the porphyrin problem by demonstrating uroporphyrinuria in her apparently normal sister, which suggests the familial element of this disorder. This finding of porphyrinuria in the case creates a stimulus to all to search in other cases, especially in bullous lesions if they lie on the unexposed parts of the body. This excellent presentation gives all of us an urge to study more dermatologic syndromes from this point of view.

Dr. Maximilian E. Obermayer, Los Angeles: I am particularly pleased with this report, which confirms the observations of Turner and myself published in 1938. The case reported by the authors is strikingly similar to that which formed the core of our report and to the 14 others which we were able to collect from the literature. The term porphyria cutanea tarda appears well chosen for this syndrome. Through the cooperation of Dr. Stephen Rothman and his staff at the University of Chicago School of Medicine I was enabled to collect some data about the present status of the patient whom we studied ten years ago. Her urine is still red and shows a concentration of 31 micrograms of coproporphyrin per hundred cubic centimeters, or about double the normal value. Detailed examinations for uroporphyrin were not carried out, but this substance was not identified on gross spectroscopy. The patient stated that her sensitivity to light had not changed but that she had learned to protect herself against the sun and has had only mild recurrences of the cutaneous symptoms in the last few years. Abnormal reactions to light still could not be elicited. The most interesting feature of the follow-up is the account of a severe psychotic episode which began in 1945; the patient is still under psychiatric treatment. I am inclined to interpret this psychosis and the jacksonian convulsions exhibited by the patient of Brunsting and Mason as late manifestations of porphyria. Neither the authors nor we were able to arrive at definite conclusions about the pathogenesis of the syndrome. In view of Turner's demonstration of the occurrence of physiologic porphyria in the fox squirrel, it seemed unlikely that actual hepatic disease is involved in the genesis of human porphyria. Brunsting and Mason have considered the possible etiologic role of hepatic dysfunction, and their conjectures are supported by the results of the British and South African investigations which Adler presented before the Royal Society of Medicine (Adler,

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[17] Snell, A. M.: Portal Cirrhosis, California & West. Med. 63: 74-78 (Aug.) 1945.

A.: Solar Dermatitis in Adults, Proc. Roy. Soc. Med. **36**:284 [April] 1943). A wealth of experimental data appear to point toward a causal connection between hepatic damage and hypersensitivity to light. Cattle in South Africa acquire a disease characterized by hypersensitivity to light when they are allowed to feed on plants containing toxic substances which act on the liver. Similar sensitization was brought about experimentally by damaging the liver through ligation of the common duct. Further studies led to the discovery that absence of a substance which accompanies vitamin A is the critical factor in causation of the hypersensitivity. Liver cells always contain vitamin A, which is necessary for their normal function. The toxic influence of thyroxin, which leads to the disappearance of glycogen from the liver, can be successfully counteracted by the administration of vitamin A.

DR. ERVIN EPSTEIN, Oakland, Calif.: It should be stressed that congenital porphyrinuria is a potentially serious condition. I recall a woman aged 18 whom I saw in the hospital some years ago. She was in coma when brought in. There was no history available and the only findings were mild erythema of the chest and a Burgundy wine colored urine. Examination of this urine proved that she had porphyrinuria. She died within a couple of days. We were later able to reconstruct some of the history from her friends and members of her family. She had been in the psychiatric wards of the hospital a number of times. Each admission was for an acute episode of mental confusion. Each time dark colored urine was noted, but at no time were examinations made for porphyrins. The erythema of the chest was later found to be due to an ultraviolet light treatment given for a cold. That, of course, seemed to be the precipitating factor in this case.

DR. THOMAS S. SAUNDERS, Portland, Ore.: I should like to raise two questions. One concerns the production of hyperpigmentation and hypertrichosis: is that an indication of adrenal dysfunction? I think we must agree that the production of hyperpigmentation in a light-sensitive person is more or less a physiologically protective proposition. The other question: I wonder if it makes any difference what the light-sensitive patient eats. The textbooks all say he should eat a diet low in animal protein, yet Bommer makes the statement that a light-sensitive patient should avoid eating green leafy vegetables, reasoning by analogy that the chlorophyll in the vegetation would make him even more sensitive to light.

DR. LOUIS A. BRUNSTING, Rochester, Minn.: I will answer the last question first. I am not familiar with conditions of photosensitivity in human beings due to dietary factors, but in animals, especially in the sheep industry, it is well known that the ingestion of certain weeds produces not only a high degree of photosensitivity but severe hepatic damage as well. In our patient hypertrichosis and melanosis had developed to a degree where the patient's skin was in decided contrast to that of her sister, whereas normally the two had been of the same complexion. There was no evidence of dysfunction of the adrenal cortex; the urine contained normal levels of 17-ketosteroids.

Electrocardiographic Changes Following Tachycardia.—Striking electrocardiographic alterations may persist for a long period of time after an attack of paroxysmal tachycardia in individuals who do not have evidence of structural heart disease. These changes are most prominent following paroxysms of ventricular tachycardia and consist in depression of the ST segments, lowering or inversion of the T waves and prolongation of the QT interval. This phenomenon has not been generally recognized. . . . As postulated by Cossio, Vedoya and Berconsky, it is thought that the automatic focus which is responsible for the paroxysmal ventricular tachycardia retains some type of activity after the cessation of the tachycardia, influencing the electrical phenomenon to produce the abnormalities of the T waves, the ST segments and the QT intervals. This syndrome is not indicative of serious heart disease, for which it may be mistaken.—Smith, Leslie B.: Paroxysmal Ventricular Tachycardia Followed by Electrocardiographic Syndrome, *American Heart Journal,* August 1946.

Clinical Notes, Suggestions and New Instruments

MENINGITIS DUE TO ESCHERICHIA COLI

Streptomycin Therapy

WILLIAM P. SHIELDS, M.D.
Providence, R. I.

Meningitis due to Escherichia coli is a rare disease at the Charles V. Chapin Hospital. During the ten year period Jan. 1, 1936 to Jan. 1, 1946, 776 patients with meningitis of all types have been admitted to this hospital. During this period there were not any cases of meningitis due to Esch. coli.

Alexander[1] recently reported the first instance of treatment of this disease with streptomycin. The patient was a 19 year old soldier. The source of infection was probably a bacteremia secondary to a mixed type of osteomyelitis of the tibia. This patient recovered with no apparent sequelae. There have been reports of the use of the sulfonamides in this disease. Thompson and Quinn,[2] Rauch and Krinsky,[3] Hollis and Baty,[4] Barrett[5] and his associates, McLendon and Mitchell[6] and Strong and Edwards[7] have reported cases with recovery—a few of full recovery, but others with sequelae such as hydrocephalus and encephalopathy with atrophy of the optic nerve. The rarity of the following case, the mode of treatment and the satisfactory response make it appear worthy of publication.

Examination of the Spinal Fluid

Date	Cell Count*	Culture	Sugar, Mg./ 100 Cc.	Protein, Mg./ 100 Cc.	Chloride, Mg./ 100 Cc.	Remarks
June 18	68	E. Coli	Too low	200	670	Opalescent
June 20	361	E. Coli	5	...	670	Opalescent
June 21	...	E. Coli	6	130	680	Opalescent
June 22	50	No growth	8	140	670	Opalescent
June 23	400	No growth	10	160	680	Opalescent
June 24	...	....	..	...	...	Bloody tap
June 25	250	No growth	14	130	680	Bloody fluid
June 26	104	No growth	18	120	670	Xanthochromic
June 28	300	No growth	..	...	...	Xanthochromic
June 29	190	No growth	20	150	...	Xanthochromic, clear
July 2	...	No growth	30	90	700	Xanthochromic, clear
July 5	120	No growth	34	80	700	Clear
July 10	154	No growth	36	40	710	Clear
July 21	40	No growth	32	45	710	Clear

* A differential cell count was not made. However, most of the cells were lymphocytes.

REPORT OF CASE

History.—M. D., a white male infant aged 5 weeks, was born in a hospital in Providence, R. I. on May 8, 1946. The delivery was normal. The child weighed 7 pounds and 7 ounces (3,374 Gm.) at birth. Shortly thereafter, the child was given an evaporated milk formula, to which a preparation of dextrin and maltose was added. On the tenth hospital day he was discharged, weighing 7 pounds and 9 ounces (3,430 Gm.).

From the outpatient department of the Charles V. Chapin Hospital.

The streptomycin was supplied by Merck & Co., Inc., Rahway, N. J., through the National Research Council, Chester S. Keefer, Chairman.

1. Alexander, A. J.: Meningitis Due to Escherichia Coli Treated with Streptomycin, J. A. M. A. **131**: 663 (June 22) 1946.
2. Thompson, H. E., and Quinn, R. P.: Meningitis Caused by Bacillus Coli: Case, J. Iowa M. Soc. **29**: 611 (Dec.) 1939.
3. Rauch, S., and Krinsky, N.: Meningitis Caused by Bacterium Coli Aerogenes, Am. J. Dis. Child. **60**: 1386 (Dec.) 1940.
4. Hollis, C. H., and Baty, J. M.: Meningitis in Children, New England J. Med. **230**:278 (March 9) 1944.
5. Barrett, G. S.; Rammelkamp, C. H., and Worcester, J.: Meningitis Due to Escherichia Coli, Am. J. Dis. Child. **63**: 41 (Jan.) 1942.
6. McLendon, P. A., and Mitchell, R. H.: Meningitis in Newborn Due to Colon Bacillus: Report of Case with Recovery, South. M. J. **34**: 1001 (Sept.) 1941.
7. Strong, P. S., and Edwards, J. E.: Escherichia Coli Meningitis Treated with Sulfadiazine, J. A. M. A. **129**: 210 (Sept. 15) 1945.

The infant was taken to his parents' home in West Warwick, R. I., and for the next three weeks seemed to do well, except that he had six or seven soft stools a day. Beginning with the fourth week, the formula was changed to a mixture of pasteurized milk and water, to which a preparation of dextrin and maltose was added. The child then began to have three or four formed stools a day. On June 14, at the age of 5 weeks, the mother noticed that the child was exceedingly warm and appeared irritable. The family physician who was called said that the child had a fever. Two days later the mother was alarmed by the rolling of the child's eyes and a profuse drooling of saliva from his mouth. During this time his appetite was good, and there was no vomiting. On June 18, the infant had tremors of all extremities, vomited once and appeared feverish and irritable. He was then brought to this hospital.

Physical Examination.—The baby appeared critically ill. The temperature was 99 F., the pulse rate 140 and the respiratory rate 40 per minute. The cry was lusty, and the bodily movements were vigorous. The skin was pale, the color was poor, and there was neither rash nor icterus. During the examination the child had a generalized convulsion of short duration. The skull was well formed, and the anterior fontanel was bulging. The eyes showed lateral nystagmoid movements, but strabismus was absent. The scleras were clear, the pupils were dilated and reacted well to light. The nose and ears were normal. The throat was not inflamed, and the oral mucosa did not display abnormalities. A systolic murmur, grade 2, was heard over the precordium, and a sinus arrhythmia was present. The lungs were clear, the abdomen was soft, and the liver was palpable. Neurologically, the child had generalized rigidity of the muscles of the lower extremities, back and neck and had a positive Kernig sign. Muscular paralyses were not evident.

A cisternal puncture was performed on admission, and 10 cc. of opalescent fluid under increased pressure was removed. In the accompanying table are summarized the data on the spinal fluid during the child's stay in the hospital.

Laboratory Data.—Examination of the blood revealed: hemoglobin 9.9 Gm. (68 per cent) by the Sahli method; red blood cells 4.2 million; white blood cells 12,150, with 60 per cent polymorphonuclears, 15 per cent small lymphocytes, 15 per cent large lymphocytes, 9 per cent monocytes and 1 per cent eosinophils. The red blood cells displayed a moderate to appreciable achromia. The urine was clear and gave normal results to the routine laboratory analyses. Culture of the blood on admission showed a pure growth of Esch. coli communior which was identical with the organism recovered from the spinal fluid. Cultures of material from the nose and throat were negative for hemolytic streptococci and diphtheria organisms. The Wassermann and Hinton tests were negative, and the blood group was type O.

Clinical Course.—The impression on admission was acute meningitis, type undetermined. Ten thousand units of penicillin were given into the basal cistern immediately, and a solution of 20 cc. of 5 per cent sodium sulfadiazine was given intravenously, followed by 150 cc. of isotonic solution of sodium chloride by slow intravenous drip. Sulfadiazine was then given orally in doses of 3.7 grains (0.25 Gm.) every six hours. During the evening of admission the infant had several severe twitchings but slept well and took the formula well.

The following day, June 19, the child's color was improved. Twitchings were absent, and the formula was taken well. A blood transfusion (75 cc. of citrated blood) was given on the following day, June 19. On June 21, 100 cc. of citrated blood was given, and this procedure was repeated on June 24. In the meantime, a gram-negative bacillus was found on culture of the spinal fluid, later identified as Esch. coli communior. Streptomycin treatment was instituted on June 20; 30,000 units were given into the basal cistern and 30,000 units were injected intramuscularly every three hours. The administration of sulfadiazine was discontinued as soon as the streptomycin therapy was instituted. This course of treatment was continued throughout the twelfth hospital day, for a total of ten days. The total parenteral dose was 2,630,000 units (intramuscularly) and, in addition, 300,000 units intrathecally. Untoward reactions were not apparent.

The patient took the formula well during the entire stay in the hospital. The weight on admission was 9 pounds and 2 ounces (4,139 Gm.), and on discharge it was 9 pounds and 9 ounces (4,337 Gm.). The circumference of the head was 15¼ inches (38.74 Cm.) during the stay in the hospital, and the anterior fontanel did not display bulging. The child was discharged to his parents on July 7, 1946, with 120 cells in the spinal fluid, which was negative, however, on culture. He was brought back for a check-up on July 10, at which time he was apparently well, and neurologic signs were absent. The cell count on the spinal fluid was 154, mostly lymphocytes, and organisms were not present on culture. The chemistry of the spinal fluid was normal.

Subsequent examination of the child has not shown evidence of sequelae or recurrence of the meningitis.

SUMMARY

A case of meningitis due to Escherichia coli communior and bacteremia in a 5 week old infant is reported. This child fully recovered without sequelae. Although this patient had received penicillin intrathecally and sulfadiazine both intravenously and orally at the onset of treatment, it is questionable whether there would have been such a rapid and satisfactory response without the streptomycin.

Streptomycin appears to be an important contribution to the treatment of meningitis due to Esch. coli.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

PENICILLIN OINTMENT.—A mixture of sodium or calcium penicillin in an ointment base composed of white petrolatum, liquid petrolatum, lanolin or any mixture of these with or without the addition of white or yellow wax and vegetable oil.

Actions and Uses.—Penicillin ointment is useful in the treatment of superficial infections of the eye involving the cornea, conjunctiva, meibomian glands and lacrimal sac caused by organisms susceptible to penicillin. It may be employed for topical application to burns of the skin to control infection. It may also be used for superficial infections of the skin such as impetigo, provided the infecting organism can be demonstrated to be penicillin sensitive.

Dosage.—Apply locally one or more times a day as the condition indicates. If indicated, supplement treatment with parenteral or oral administration of penicillin.

Abbott Laboratories, North Chicago, Ill.

Penicillin Calcium Ointment: 30 Gm. tubes. Each gram contains 1,000 units of penicillin calcium in white petrolatum, U. S. P.

Penicillin Calcium Ophthalmic Ointment: 4 Gm. tubes. Each gram contains 1,000 units of penicillin calcium in a base consisting of white petrolatum, U. S. P., 80 per cent and liquid petrolatum, U. S. P., 20 per cent.

E. R. Squibb & Sons, New York

Penicillin Calcium Ointment: 14.5 Gm. tubes. Each gram contains 1,000 units of penicillin calcium in a base consisting of beeswax, peanut oil, petrolatum and anhydrous lanolin.

Winthrop Chemical Co., Inc., New York

Penicillin Calcium Eye Ointment: 3.54 Gm. tubes. Each gram contains 1,000 units of penicillin calcium in a base consisting of white petrolatum, U. S. P., 60 per cent and liquid petrolatum, U. S. P., 20 per cent and lanolin anhydrous, U. S. P., 20 per cent.

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SATURDAY, NOVEMBER 2, 1946

PLANS FOR A RURAL HEALTH PROGRAM

The Committee on Rural Medical Service of the American Medical Association at its meeting in San Francisco on June 30 reported that thirty-one state medical societies had made progress toward establishing rural health committees and formulating medical society sponsored plans to improve rural health and to provide for voluntary prepayment against costs of illness. The Council on Medical Service and the Rural Medical Service Committee held additional meetings in September, emphasizing the interest of the medical profession in leading movements to improve the health services of rural communities. Significantly, committees formed by various rural organizations in the states to develop plans for health services have been interested in the point of view of the medical profession; leaders of national farm organizations are seeking the guidance of medical agencies. The major farm organizations are cooperating in the development of rural health programs. Through their committees they are initiating health educational programs and enrolment in prepayment plans on a local basis.

Joint meetings of rural health service committees of state medical societies and committees on rural health service of farm organizations have been reported by several states and are being planned by others. The discussions center around farm health needs, health facility surveys, medical personnel, an adequate public health and sanitation program, health education in the schools, dental health needs, health legislation, hospitals as memorials to war heroes, and what has been done for rural medical care in other states. Minimum standards for each type of health service need are being considered by state and national committees to serve as a guide, not to tell the local people what to do but to point out a way in which it may be done when once a decision has been reached.

The report from the physicians' rural health service committee of Minnesota states that, "if the presence of a physician in the community is to have the full effect in rural medicine, we must also have suitable homes for our rural families, balanced diet for the promotion of healthy growth and the maintenance of vigorous bodies. Knowledge of good living habits, instructions for expectant mothers, infant care, the home management of common ailments and first aid are most important and full confidence in and proper utilization of facilities for hospital and medical care that are at hand."

From Indiana comes the suggestion that hospitals might be extended into rural areas by inviting physicians in villages around hospitals to the courtesy staff. Thus they could attend staff meetings, bring their patients for consultation or diagnosis and care for their patients within the limits of their experience.

The problem of the farm family with low income in obtaining and paying for medical care might be solved by securing enrolment of farmers in a prepayment plan when income is relatively high. In some areas state and local welfare agencies may prepay the premiums of the indigent, and the state and local taxing units may be approached for part of the premium for low-income families.

STREPTOMYCIN-PROMIN THERAPY

In 1945 Smith and McClosky[1] of the National Institute of Health, Bethesda, Md., reported that streptomycin and promin when administered together, the one intramuscularly and the other orally, to guinea pigs infected with a human strain of tubercle bacilli exerted a chemotherapeutic action greater than what might have been expected from a simple summation of effects. This assumed synergic therapeutic action was afterward duplicated[2] by therapeutic tests on white rats, which are normally highly resistant hosts to tubercle bacilli.

Intraperitoneal or intravenous inoculation of human or bovine strains of tubercle bacilli into white rats usually results within a month in progressive proliferation of monocytes, forming aggregates of epitheloid cells, with a few multinucleated giant cells. These cellular aggregates are found predominantly in the lungs, liver and spleen. Tubercle bacilli multiply in great numbers in these cells without producing necrosis, caseation or other serious tissue damage. The whole process has litle effect on the general health until much of the normal lung is replaced by the epitheloid masses. This ultimately so impairs the normal respiratory function that the animal dies of asphyxia.

In the confirmatory tests, four groups of adult rats were each inoculated intraperitoneally with 5 mg. of virulent human tubercle bacilli. Each group consisted of 12 rats. Immediately after the inoculation, treatment was begun and continued as follows: group A, 50,000 units of streptomycin per kilogram injected intramuscularly once daily and promin fed in the daily diet at a level of 0.7 per cent; group B, promin fed in the diet at the same level but no streptomycin; group C, streptomycin given at the same level but no promin; group D, untreated controls. At twenty-eight to fifty-three days following inoculation the animals were killed by decapitation in sets of 4, 1 from each group. The left lobes of the lungs were finely emulsified. Smears, glycerin-egg slants and guinea pig inoculations were made with aliquot parts of each emulsion.

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[1] Smith, M. I., and McClosky, W. T.: Pub. Health Rep. **60**: 1129 (Sept. 28) 1945.

[2] Smith, M. I.; McClosky, W. T., and Emmart, E. W.: Proc. Soc. Exper. Biol. & Med. **62**: 157 (June) 1946.

In group D (nontreated controls) 8 of the 12 animals showed positive smears, 11 developed tubercle bacilli on subcultures and all 12 developed tuberculosis on guinea pig inoculation (average severity 4.6 on the Smith scale[3]). In group C (promin treated) 9 of the 12 animals showed positive smears, 7 yielded positive subcultures and 9 gave positive inoculations in guinea pigs (average severity 3.1). In group C (streptomycin treated) only 2 rats gave positive lung smears, 8 positive subcultures and only 7 positive inoculations in guinea pigs (average severity 3.8). In contrast, group A (streptomycin plus promin) showed no positive lung smears, only 3 of the 12 members gave positive subcultures and there were only 5 positive guinea pig inoculations (average severity 0.7).

Summarizing his results, Smith concludes that under his selected experimental conditions treatment with promin alone was without beneficial effects. Treatment with streptomycin alone resulted in negligible therapeutic effects. Combined treatment with streptomycin and promin resulted in a sterilization of 41.6 per cent of the inoculated rats and an 85 per cent reduction in the number of viable (or virulent) tubercle bacilli in the remaining (58.4 per cent) members of the group.

A theory has not thus far been suggested to account for this presumable synergic therapeutic action. Whether or not the combined therapy would be equally effective in later intracellular stages of experimental tuberculosis in rats has not yet been determined.

HEALTH AND PHYSICAL FITNESS

With the establishment of the Health and Physical Fitness Project in its Bureau of Health Education, the Association takes another step forward in its effort to contribute to the promotion of health. Health and physical fitness are important even though the popular interest in them has considerably diminished with the end of the war. The Board of Trustees early in 1946 authorized the establishment of a health and physical fitness project in the Bureau of Health Education to work under the supervision of the American Medical Association Committee on Health and Physical Fitness.

The project will include the health and fitness problems of the preschool child, the school child, the college students, the adult, both rural and urban, and the industrial worker. Though the committee contemplates cooperation with all other health agencies working toward health improvement in home, school, industry and community, it has expressed the belief that it is first in the schools and second in industry that the most immediate and most practical approach to the problem lies. The efforts of the consultants in the project will therefore be directed primarily to these fields.

The committee will not attempt to set up any master plans or "ideal" health programs and then attempt to procure their widespread adoption in the schools and industries of all types and sizes. Rather it is the plan to accumulate source files on the varied health programs now in use with the purpose of making both reports on these programs and the advice and counsel of the two consultants available on invitation to boards of health, boards of education, employers, employee groups, medical societies and women's organizations.

This project is in a sense a continuation of the work carried on by the Association in conjunction with government agencies and other interested groups during the late war. Including the project in the total health education program of the Association and staffing it with a physician who has had wide experience in health education and an educator experienced in the health and physical education fields will give it a permanence and a practicability lacking in the previous organization.

TOMOGRAPHY IN THE DIAGNOSIS OF LUNG CARCINOMA

Grossmann[1] in 1935 described an apparatus with which he was able to demonstrate clearly pulmonary abnormalities not well shown by other radiographic means. The tomograph has steadily gained new advocates, particularly in England. Roentgenograms of a selected plane or stratum of the patient's body are accomplished by moving the tube and the film during the exposure in such a manner that the images of objects in the selected plane occupy the same positions on the film, while the images of objects in planes above or below that plane are blurred by the movement.

Recently Hartley,[2] in a review before the Section on Radiology of the Royal Society of Medicine, made a strong plea for this method of examination of chest lesions, especially when the diagnosis lies between primary carcinoma of the lung, mediastinal tumor or mediastinal metastasis. In these situations early diagnosis becomes more imperative as the possibilities of cure or alleviation by radiotherapy or surgery increase. These two therapeutic methods demand accuracy in diagnosis, the former in order to plan the radiation dosage, the latter in order to decide the question of operability.

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[3] Smith, M. I.; Emmart, E. W., and Stohlman, E. F.: Am. Rev. Tuberc. **48:** 32 (July) 1943.

[1] Grossmann, G.: Tomography, Fortschr. a. d. Geb. d. Röntgenstrahlen, **51:** 61 (Jan.), 191 (Feb.) 1935.

[2] Hartley, J. Blair: Tomography in the Diagnosis of Lung Carcinoma, Proc. Roy. Soc. Med. **39,** July 1946.

The demand for more accurate methods at the Holt Radium Institute arose from the fact that primary carcinoma of the lung referred for treatment multiplied 3.3 times from 1940 to 1944, and the number of cases of malignant disease of the mediastinum multiplied 2.5 times. The demand arose also because the established diagnostic method, bronchography using lipiodol, was contraindicated; the therapists objected that treatment was already difficult without introducing the factor of an unknown quantity of iodine within the lung; second, it was recognized that bronchoscopy had limited value in that some carcinomas lie in situations not visible or reachable by the bronschoscope; third, it was necessary to localize the treatable lesions in depth and, if possible, in extent.

Although the tomographic unit used in these investigations was the same simple and primitive unit used by Hartley's predecessor, the late E. W. Twining,[3] it was of great value both to the diagnostician and to the radiotherapist. The device was valuable in demonstrating whether one was dealing with carcinoma of the obstructing or ulcerating type or whether the lesion was extensive and of the peribronchial infiltrating variety, in confirming the obstruction of a bronchus and in demonstrating its probable site of origin and in demonstrating the size or depth of a carcinoma already diagnosed and the true nature of lesions incorrectly diagnosed. It was exceedingly useful as an aid in determining whether changes found in the chest picture during the follow-up period were due to recurrence of the treated lesion or to mechanical deformities resulting from fibrosis, which in turn might result from treatment.

Tomography has certain limitations. It does not necessarily indicate the exact nature of the lesion. It is frequently not reliable in distinguishing between how much of the lesion shown in a routine roentgenogram is due to malignancy and how much to infection. It does not easily demonstrate early lesions in the lungs; in fact, they may be missed; here improvements in technic are required. Tomography cannot replace routine radiography; it can be really satisfactorily carried out only after study of and with measurements obtained from both the posteroanterior and the lateral views. Nevertheless, as Hartley concludes, its value is not adequately realized, and it should replace lipiodol bronchography when the case is likely to be one of carcinoma of the bronchus or when radiation therapy is indicated.

Current Comment

POSTGRADUATE EDUCATION IN PSYCHOSOMATIC MEDICINE

An experimental graduate course was recently given to determine whether general practitioners can be *taught to practice in their offices the kind of medicine* psychoneurotic patients need. This course was sponsored jointly by the Commonwealth Fund and the Division of Postgraduate Education of the University of Minnesota and was held at the Center for Continuation Study of the University of Minnesota.[1] Two weeks was considered adequate for instruction without depriving the busy physician of too much of his time. The teaching staff was drawn from the ranks of younger psychiatrists, most of them with military experience. The student group consisted of twenty-five physicians representing the practice of medicine under varying conditions in communities of assorted size chiefly in Minnesota and neighboring states. Instruction was both didactic and clinical. After the course had been completed the following specific goals were defined:

1. To give the doctor a feeling of the dynamic qualities and the value of the doctor-patient relationship.
2. To introduce him to broad patterns of human motivation and to the common causes and backgrounds of emotional disturbance.
3. To lead him to think in terms of the relation between emotional disturbance and illness.
4. To teach him easily understandable methods of therapy so that he can treat a share of such illness.
5. To give him some knowledge of more malignant conditions so that he may refer them to specialists.

Careful analysis by both students and instructors at the end of the course furnished evidence that this type of graduate education had been valuable in a practical sense.

DECLINE IN INTELLIGENCE

Several studies have indicated that there is an average of a two or three point decline in intelligence (I. Q.) in each generation. According to Thomson,[1] it is impossible to say how much of this may be due to heredity and how much to environment. The theory of the decline is, of course, based on present methods of intelligence testing, but these, like other scientific technics, are subject to change. The decline, if true, may be due to the differential birth rate, families of higher intelligence ratings on the average having fewer children than those with low ratings. The subject is important enough to warrant intensive study. Thomson urges that actual measurement of two successive generations be made and that all who are in a position to facilitate such experiments exert themselves in this direction.

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[3] Twining, E. W.: Tomography by Means of a Simple Attachment to the Potter-Bucky Couch, Brit. J. Radiol. **10:** 112 (April) 1937.

[1] Smith, Geddes: Psychotherapy in General Medicine: Report of an Experimental Postgraduate Course, Commonwealth Fund, New York, 1946.

[1] Thomson, Godfrey: The Decline in Intelligence, Eugenics Review, April 1946.

ORGANIZATION SECTION

Official Notes

MEETING OF EXECUTIVE COMMITTEE OF COUNCIL ON MEDICAL SERVICE

September 18, 1946

The meeting was called to order by the chairman, Dr. E. J. McCormick. Those present were Dr. James R. McVay, Dr. A. W. Adson, Dr. Louis H. Bauer, Dr. Joseph S. Lawrence, Thomas A. Hendricks, secretary, George W. Cooley, assistant secretary, Jay C. Ketchum, Howard O. Brower, L. S. Kleinschmidt and Frank G. Dickinson, Ph.D., director, Bureau of Medical Economic Research. Others present at intervals during the meeting were J. W. Holloway Jr., director, Bureau of Legal Medicine and Legislation; T. V. McDavitt, Bureau of Legal Medicine and Legislation; Dr. C. M. Peterson, secretary, Council on Industrial Health; Dr. John H. Fitzgibbon, and Dr. C. W. Roberts.

Relationship of Council to Associated Medical Care Plans.—Dr. McCormick and Dr. Adson gave a report of a joint meeting of Council representatives and officers of Associated Medical Care Plans. The Council discussed the financing of A. M. C. P., the location of its headquarters, the function it should assume and the degree of participation by the Council in policy control. In view of the meeting of plan executives set for October 4-6 it was voted that any further action on the relationship between the Council and A. M. C. P. be deferred until a later date.

The Seal of Acceptance.—Applications for the Seal of Acceptance were read and discussed. The following plans were added to the original nine plans:

Physicians Association of Clackamas County, Oregon.
Hospital Service Corporation, Alabama.
Hospital Service of California.
Florida Medical Service Corporation.
Genesee Valley Medical Care, New York.
Hospital Saving Association of North Carolina.
Oklahoma Physicians Service.
Coos Bay Hospital Association, Oregon.
Pacific Hospital Association, Oregon.
Klamath Medical Service Bureau, Oregon.
Group Medical and Surgical Service, Texas.
The Dallas County Medical Plan, Texas.
Surgical Care, Inc., Virginia.
Medical Surgical Service, Inc., West Virginia.
Marion County Medical Service, Inc., West Virginia.
Medical-Surgical Care, Inc., West Virginia.
West Virginia Medical Service.

Joint Meeting with Insurance Company Representatives.—Mr. Hendricks reported on a meeting with representatives of insurance associations.

Two committees suggested at the meetings were approved by the Council and the following appointed to serve as Council representatives: 1. Committee on Cooperation: Dr. A. W. Adson, chairman; Dr. James R. Miller; Lester Perry; ex officio members: Jay C. Ketchum, Frank Dickinson, Ph.D., and Howard Brower. 2. Committee on Rural Enrolment: Dr. James R. McVay, chairman; Dr. F. S. Crockett, and L. S. Kleinschmidt. Ex officio member, Frank G. Dickinson, Ph.D.

Authorization was given to make contact with the Blue Cross Commission and/or the American Hospital Association, requesting that representatives be appointed to serve on both committees.

Taft Bill.—The Council discussed the Taft bill, considering ways and means of evaluating the bill. A letter to the state medical societies asking for suggestions was authorized, with a report on the answers to be compiled for the next meeting. Letters from California and Washington were read and discussed.

United Mine Workers Health Fund.—Mr. Hendricks gave a report on the United Mine Workers Health Fund and the meeting in Williamson, W. Va., with the Mine Physicians' Group. A vote of commendation was extended to Dr. Walter B. Martin for his excellent work on the bituminous coal situation. It was suggested that a Council representative join one of the navy field teams in inspecting the coal mine areas. Dr. George Easley of Williamson, W. Va., spoke informally to the Council on the medical care situation in the coal mines. He was commended and was asked to keep the Council informed on future developments.

Rural Health.—The Council read and discussed the recent News Letter on Rural Health. It was suggested that similar letters might well be set up for other points of the Ten Point Program.

Mr. Hendricks introduced a new member of the Council staff, Mr. L. S. Kleinschmidt, who is to concentrate on rural medical care programs. Attention was called to the suggested program for rural participation in prepayment medical care plans, and the Council members were asked to become familiar with it for discussion at the next meeting.

Co-Op Movement.—Mr. Hendrick gave a report on the "Co-Op" meeting in Two Harbors, Minn. There was discussion as to the attitude of organized medicine on this movement. No action was considered advisable until further information could be developed.

Hill-Burton Bill.—The Council discussed a possible program with reference to the Hill-Burton bill. Dr. John Fitzgibbon and Dr. C. W. Roberts, members of the Board of Trustees, brought the thoughts of the Trustees on this matter to the Council. In general it was believed that the Council should provide the state medical societies with basic principles and policies to be followed in carrying out the provisions of the bill. Specifically, the Council was requested to prepare such recommendations for the House of Delegates meeting in December. The Council authorized a special News Letter to be sent out on the subject.

Miscellaneous Activities.—Debate Handbook: Handbooks on Compulsory Sickness Insurance: Mr. Cooley presented the final proofs of a new brochure entitled "Voluntary Health Insurance vs. Compulsory Sickness Insurance." This brochure is to be sent out in cooperation with the National University Extension Association as a part of the material for use by students in this year's debates. Over eight thousand requests have already been received, with more coming in daily. Several suggestions were made, and the proof was approved.

A Motion Picture: The Council authorized investigation into the possibility of either making or obtaining a movie showing the progress of medicine or of the prepayment plan movement. This would be made available to meetings of lay groups.

Speakers Bureau: The Council is organizing a program designed to develop speakers on various subjects of popular interest. Contact will be made with the state and county medical societies to find out the extent of such programs and get information for possibilities of some sort of correlation.

Washington Office: Dr. Lawrence spoke briefly on the Legislative Reorganization Act and on the new bill requiring the registration of lobbyists. He pointed out that although the Social Security Board was abolished the personnel, including Mr. Altmeyer, was transferred to the Federal Security Agency.

National Health Congress: There was considerable discussion as to the next moves to be made in correlating the efforts of the state and local health councils. It was decided to call a general meeting at the time of the House of Delegates meeting or the Secretaries' Conference.

American Cancer Society: Dr. McCormick read a letter from the American Cancer Society concerning the problem of diagnostic clinics. The matter was referred to Drs. Bauer, Miller, McGoldrick and McCormick with authorization to attend a meeting of the American Cancer Society in New York as Council representatives.

Rating Committee: The Council reviewed the work done to date on the schedule of relative values. In view of the joint committee work of the Council and the insurance associations, it was felt that the schedules should be completed as soon as possible.

RESOLUTIONS TO BE PRESENTED TO HOUSE OF DELEGATES

NOTE.—These resolutions are published in accordance with a request of the House of Delegates to the effect that resolutions to be presented before the House of Delegates be published thirty days before the House of Delegates is to convene in session

These two resolutions were adopted by the Utah State Medical Association:

Resolution on Rich Report

WHEREAS, The American Medical Association has had a complete and presumably competent survey of its public relations made by the Rich Associates, and

WHEREAS, The report of the Rich Associates apparently contains rather sweeping recommendations; and

WHEREAS, The contents of this report are unknown to the House of Delegates of the American Medical Association in spite of the fact that said House is the policy making body of the American Medical Association, and

WHEREAS, It is believed to be unwise for the House of Delegates to approve changes in the American Medical Association without knowledge of what it is that it approves, be it

Resolved, That the delegate to the American Medical Association is hereby instructed to take such action in the House of Delegates of the American Medical Association as will result in the members of that House becoming informed as to the contents of the so called Rich report of the Rich Associates

Resolution on Referring All Business to Reference Committees

WHEREAS, At the last meeting of the House of Delegates of the American Medical Association numerous matters were referred to the Board of Trustees as a reference committee, and

WHEREAS, At least one question was referred to the Judicial Council as a reference committee, and

WHEREAS, The By Laws of the American Medical Association clearly set forth the constitutional manner of appointment and duties of the reference committees of the House, and

WHEREAS, It appears improper that a standing committee of the Association should act as a reference committee to review its own actions; be it

Resolved, That the delegate to the American Medical Association is hereby directed to take such action in the said House as will result in all business of the House of Delegates being referred to the reference committees of the House in accordance with the By Laws of the American Medical Association.

Resolution on Fees from Insurance Companies

The following resolution was passed by the House of Deleates of the Tennessee State Medical Association:

Resolved, that it is the sense of the Tennessee State Medical Association in meeting assembled that we deplore the injustice of the insurance companies of America toward the members of the medical profession in their failure to raise the five dollar fee paid for medical examinations for more than seventy five years This rank unfairness is accentuated by the fact that the entire financial structure of life insurance is erected and its solvency based on the integrity and professional ability of the examining physician Moreover, this flagrant violation of fair practice on the part of all life insurance companies is made more glaring by the fact that no account is taken of the increased cost of medical education, medical equipment and medical expenses, including transition from the horse and buggy to the automobile age

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Washington Letter

(From a Special Correspondent)

Oct. 28, 1946.

Global Control of Venereal Disease Advocated

Two U. S. Public Health Service officials, Dr. J. R. Heller, chief of the venereal disease division, and Dr. R. A. Vonderlehr, former chief who is now public health director in Puerto Rico, have written a book, "The Control of Venereal Disease," which proposes global control through closer international cooperation, a universal system of diagnostic service, worldwide organization of free clinics and global headquarters for the exchange of information

Hospital Deficiencies Cited by Dr. Claude W. Munger

Dr. Claude W. Munger, co-author of the Metropolitan Health and Hospital Survey, which accused Washington, D. C., hospitals and medical care of many shortcomings, reiterated that the city's hospitalization requirements were "crying aloud for solution." He joined with Admiral Ross T. McIntire, Surgeon General of the Navy, and Major Gen. U. S. Grant 3d, chairman, in an appeal for support of the George Washington University drive for $925,000 for its new hospital.

Nurses Who Died in Europe During World War II to Be Honored

The sixteen army nurses who died through enemy action in the war were honored at ceremonies Sunday in the amphitheater of Arlington National Cemetery. Major Gen. Norman T. Kirk, Surgeon General of the Army, introduced Secretary of War Patterson, who paid tribute to the war service of all enlisted nurses. In addition to the sixteen who died through enemy action, 180 army nurses died of natural causes while on duty.

George Washington University to Conduct Research in Anesthesia

Dean Walter A. Bloedorn of George Washington University School of Medicine reported here, coincident with the one hundredth anniversary of anesthesia, that a $20,000 grant had made possible the first major research in anesthesia ever conducted in Washington. Radioactive isotopes will be used in research when equipment such as the Geiger counters and radioactive materials become available

President Truman Honors Egyptian Undersecretary of Health

President Truman has presented to Dr. Ali Tewfik Sousha Pasha, Egyptian undersecretary of health, the Medal of Freedom with Silver Palm for research on typhus and other tropical diseases for the U. S. Navy during the war. The medal was presented at Cairo, Egypt, by naval attaché Capt. T. J. Carter in behalf of the President

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Coming Medical Meetings

American Medical Association House of Delegates Supplemental Session, Chicago, Dec. 9-11. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

Conference of State Secretaries and Editors, Chicago, Dec. 7-8. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Allergy, New York, Nov. 25 27. Dr. Karl D. Figley, 316 Michigan St., Toledo 2, Ohio, Secretary.

American Academy of Dermatology and Syphilology, Cleveland, Dec. 7 12. Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo, N. Y., Secretary.

American Academy of Pediatrics, Pittsburgh, Nov. 13-16. Dr. C. G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American College of Surgeons, Cleveland, Dec. 16 20. Dr. Dallas B. Phemister, 40 E Erie St, Chicago 11, Secretary.

American Otorhinologic Society for the Advancement of Plastic and Reconstructive Surgery, New York, Nov. 14. Dr. Norman N. Smith, 291 Whitney Ave., New Haven 1, Conn, Secretary.

American Public Health Association, Cleveland, Nov. 12-14. Dr. R. M. Atwater, 1790 Broadway, New York 19, Executive Secretary.

American Society of Anesthesiologists, New York, Dec 12. Dr. Curtiss B. Hickcox, 745 Fifth Ave, Room 1503, New York, Secretary.

National Society for the Prevention of Blindness, New York, Nov. 25-27. Mrs. Eleanor Brown Merrill, 1790 Broadway, New York 19, Executive Director.

North Central Medical Conference, St Paul, Nov. 10 Mr. R. R. Rosell, 493 Lowry Medical Arts Building, St. Paul, Secretary.

Post Graduate Medical Assembly of South Texas, Houston, Dec. 3-5. Dr. M. B. Stokes, 229 Medical Arts Bldg., Houston, Secretary.

Puerto Rico, Medical Association of, Santurce, Dec 13-15. Dr. Rafael A. Vilar, P. O. Box 3866, Santurce, Secretary.

Radiological Society of North America, Chicago, Dec. 1-6. Dr. Donald S. Childs, 607 Medical Arts Bldg, Syracuse 2, N. Y., Secretary.

Society of Surgeons of New Jersey, Newark, Nov. 20. Dr. Walter B. Mount, 21 Plymouth St., Montclair, Secretary.

Southern Medical Association, Miami, Fla., Nov. 4-7. Mr. C. P. Loranz, Empire Bldg., Birmingham 3, Ala., Secretary.

Southern Surgical Association, Hot Springs, Va., Dec. 10-12. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Western Surgical Association, Memphis, Tenn., Dec. 5-7. Dr. Warren H. Cole, 1853 W. Polk St., Chicago 12, Secretary.

GOVERNMENT SERVICES

ARMY

FIRST MEETING OF THE SOCIETY OF U. S. MEDICAL CONSULTANTS

The first meeting of the Society of United States Medical Consultants of World War II was held at the Army Medical Center, Washington, D. C., on October 18. The society is composed of former medical officers, now returned to civilian life, who were consultants for the Army Medical Department in World War II. The group has formed this association under its own initiative to further the advance of the medical profession in the United States, with the particular objective of establishing close liaison with army medicine. Its plans are in the formative stage as yet, and one aim of this meeting was to set up a procedure which will aid in carrying out the objectives.

The meeting was opened by an address by the president of the society, former Brig. Gen. Elliott C. Cutler of Harvard University. Major Gen. Norman T. Kirk then paid tribute to the men whom he considers to have been highly instrumental in the record established by the Medical Department during the war, with its exceptionally low death and disease rates.

Eli Ginzberg, Ph.D., former chief of resources analysis, Office of the Surgeon General, and now professor of economics at Columbia University, analyzed certain problems coped with by the Medical Department during the war, the various methods tried and those which proved successful. He called particular attention to the achievement of the medical regulating officer, through whose offices flowed the assignment of patients at the rate of 20,000 a day who were sent to hospitals according to their type of injury or disease. Comments were freely made from the floor by the keenly interested audience, numbering about ninety, who had traveled from points over the country to attend the meeting in spite of the local hotel strike.

Major Gen. W. S. Paul, director of personnel administration, G-1, explained how the revised organization chart of the Army cleared out many barriers to enable the technical services to function at an optimum.

Luncheon at the Officers Club was followed by a closed afternoon session, attended only by members, for the discussion and ratification of the constitution and other business matters. New officers were elected as follows: president, Dr. Walter Bauer, Massachusetts General Hospital, Boston; vice president, Dr. Frank B. Berry, New York; secretary, Dr. Brian Blades, George Washington University Medical School, Washington, D. C.; treasurer, Dr. Donald M. Pillsbury, Department of Dermatology and Syphilology, University Hospital, Philadelphia, and a committee of four counselors, Dr. William S. Middleton, University of Wisconsin Medical School, Madison; Dr. Glen R. Spurling, University of Louisville, Ky.; Dr. Douglas A. Thom, Boston, and Dr. W. B. Parson, Presbyterian Hospital, New York.

A breakdown of specific services consultations constituted the Saturday morning program, with meetings held in various conference rooms in the hospital. Arrangements for the Saturday morning meetings were under the direction of former Brig. Gen. Hugh J. Morgan for the medical group, former Brig. Gen. William C. Menninger for the neuropsychiatric group and former Col. Brian Blades for the surgical group.

AIRBORNE MEDICAL COMPANY AWARDED THE CROIX DE GUERRE

The French military attaché in the United States, Lieut. Gen. Maurice Mathenet, and members of his staff flew from Washington to Fort Bragg, October 17, where fifteen units of the famous 82d Airborne Division were decorated with the Fourragère of the French Croix de Guerre. Among these units was the 307th Airborne Medical Company. The units decorated were cited for two separate actions in Normandy: one on June 5-6, 1944, the night before the D day invasion of France in the vicinity of Ste. Mère Eglise, and the other from June 6 to June 20 in and around le Merderet, la Douve, St. Sauvuer-le-Vicomte and Etienneville. The citations were signed by the head of the provisional government of the republic of France. The French fourragère is predominantly green and is worn on the left shoulder. The entire 82d Airborne Division had already received the Military Order of Willems from the Netherlands and the fourragère of the Belgian Croix de Guerre.

The Distinguished Unit Citation had previously been awarded by the War Department to the 307th Airborne Medical Company of the 82d Airborne Division for extraordinary heroism and outstanding performance of duty in the initial assault on the coast of Normandy on June 6, 1944. This unit landed by glider in the face of artillery, machine gun and antiaircraft fire, and almost without rest or pause for forty-eight hours its officers and enlisted men gave the utmost of their skill and will in caring for the wounded.

SOLDIERS' PREFERENCES FOR EMERGENCY FOOD ITEMS

The Quartermaster Corps inquired of 9,691 combat soldiers of World War II to name the items they would prefer in an emergency ration to be used if they were cut off from supply and could eat only the food they carried with them.

Their choice of items in order of frequency was coffee, cigarets, biscuits, crackers, candy, chewing gum, cheese, sugar, bacon and eggs or ham and eggs, frankfurters and beans, and meat and beans. All these men had eaten combat rations, and all of them had been awarded the Combat Infantry Badge.

When asked about the K ration items, which they consumed most completely, chewing gum drew 87 per cent of the favorable answers, caramels 85 per cent, candy bars 82 per cent, coffee 76 per cent and ham and eggs 68 per cent.

When asked about the C ration items they used most completely, 85 per cent of the men said chewing gum and 83 per cent caramels, and then in order candy coated peanuts, chocolate drops, frankfurters and beans, coffee, cocoa and fudge. Twenty-five per cent ate almost none of the beef stew. The fruit powders ran low in the lists.

Concerning the type of tobacco other than cigarets which they preferred in their PX rations issued at the front, 39 per cent went for pipe tobacco, 30 per cent for cigars, 20 per cent for cigaret tobacco and 10 per cent for chewing tobacco. Thirteen per cent of the men said that they did not smoke cigarets.

DELAY SEPARATION OF NURSES PENDING CLOSING OF HOSPITALS

Major Gen. Norman T. Kirk, the Surgeon General, announces that army nurses in category III on duty in hospitals scheduled for closing by December 31 will not commence their terminal leave until the hospital closes. Other category III nurses who would ordinarily commence terminal leave November 1 may be retained temporarily but must be relieved from active duty by December 1. In each instance in which a category III nurse is retained on active duty in a hospital slated for closing, her terminal leave must begin not later than December 31.

Army general hospitals scheduled for closing by December 31 are Halloran, Staten Island, New York; Bruns, Sante Fe, N. M.; Mason, Brentwood, Long Island, N. Y., and Wakeman, Camp Atterbury, Indiana. Moore General Hospital, Swannanoa, N. C., will close November 15.

With 75,000 patients in army hospitals throughout the world and a nursing shortage possible because of lowered discharge criteria announced last month, the Surgeon General has been authorized to hold category III nurses until a voluntary recall quota of 1,000 nurses can be effected or until the dates indicated. General Kirk stressed that the welfare of the patient comes first. He feels sure that enough former army nurses will return to duty to meet strict requirements of army medicine. Through

September 27 there have been 48,350 nurses separated. At the height of the war the Army Nurse Corps totaled 57,000 nurses.

Experienced World War II army nurses who wish to return to active duty are urged to write immediately to the Adjutant General, Washington, D. C., for application forms. They should be less than 34 years of age, physically qualified for general duty, have no dependents under 14 years of age, be unmarried and have an efficiency rating for previous service of 35 or better. They may return for two years or an unlimited period of time. Nurses may wear civilian clothes when not on duty, uniforms they wore to separation centers are authorized, and their return to duty will not prejudice their opportunities for integration into the planned Regular Army Nurse Corps.

STATISTICAL HEALTH SURVEY OF WACS IN THE WAR

The Medical Statistics Section of the Surgeon General's Office has released figures which indicate that the members of the Woman's Army Corps withstood the physical and mental ordeals of war almost as well as male soldiers. The Wacs did not show any common disqualifying weakness as a group. This conclusion is based on the hospitalization records of the 140,000 women who served in the Wacs. While the statistics are confined to nonbattle cases, they include accidental injuries and illnesses due to training or exposure.

The hospital admission rates for diseases during the last year of the war in the United States averaged 506 per thousand persons annually for all military personnel, while those for the Wacs was 793 per thousand annually.

The popular impression that women have more frequent illnesses than men under the same conditions is supported to some extent by these statistics. The common respiratory diseases and influenza comprised the greatest single cause for hospitalization in this country. In this category the statistics show that the women had a rate of 160 per thousand annually as compared with 100 for the army as a whole. The hospitalization record of Wac soldiers for nervous and mental ailments was 37 per thousand annually as compared with 40 per thousand for all troops in this country.

In the European, Mediterranean and Western Pacific theaters where there were large detachments of Wacs the data indicated that, relative to strength and the conditions to which they were exposed, a greater proportion of hospital beds were needed than for the army as a whole. In the Western Pacific between June 1944 and December 1945 a constant 3.7 per cent of the Wacs were hospitalized, as compared with 3.2 per cent of all troops, for disease and nonbattle injury only. In the Mediterranean Theater for about the same period the Wacs hospitalization rate was 3.2 as compared with 3.1 for the army as a whole. Only in the European Theater was the percentage of Wac strength hospitalized less than that for all troops: 2.2, compared with 2.5 per cent. The fact that such illnesses as trench foot and combat fatigue were due to conditions to which the women were seldom exposed would tend to decrease the differential sick rate in favor of the WAC.

MEDICAL DEPARTMENT TECHNICIANS

The number of medical department technicians trained from July 1939 to June 1946 was 114,997. During this period courses for technicians in medicine, surgery, dentistry, laboratory, pharmacy, meat and dairy inspection, medical equipment maintenance, orthopedic machinery, veterinary medicine, sanitation and x-ray were conducted at twelve general hospitals and army medical centers. Since the close of hostilities the number of training centers has been reduced to three enlisted technician schools at Brooke Army Medical Center, Fort Sam Houston, Texas; Fitzsimons General Hospital, Denver, and Wakeman General Hospital, Camp Atterbury, Indiana. The training program now has 5,200 enrolled in the three schools. After the war large numbers of technicians were released to private life, many of whom are now employed in a civilian capacity at the same jobs that they learned in the Army. Civilian hospital laboratories and clinics also employ many ex-soldiers who were trained through schooling and practical experience in a global war which saw fifteen million patients admitted to army hospitals for treatment of practically every ill known to mankind.

WITH THE 8TH ARMY IN OSAKA

The 13th U. S. Army General Hospital in Osaka, Japan, was host October 8 to the third medical conference to be held in Japan. Medical officers throughout Japan attended, including a large group of British Occupation Forces medical officers. Lieut. Col. Michael L. Sheppeck, commanding officer of the 13th General Hospital, gave the opening address, after which all the delegates were introduced. Lieut. Robert K. Curtiss of the 13th General Hospital gave the first paper, on "Primary Pleurisy with Effusion." Lieut. William H. Wilson, chief of the communicable disease section of the hospital, discussed "The Incidence of Tuberculosis in Japan." The afternoon program was given over to discussions from the floor and the presentation of cases.

FIRST PUBLIC USE OF ETHER ANESTHESIA COMMEMORATED

An exhibit of books, prints and manuscripts on the development of anesthesia opened in the Library of Congress, October 16, to commemorate with the Army Medical Library the one hundredth anniversary of the first public demonstration of ether anesthesia. The exhibit will remain on view until November 30. The discovery of surgical anesthesia was purely an American one. The exhibit illustrates the growth of man's knowledge of anesthesia from preanesthetic days until modern times.

BRUNS GENERAL HOSPITAL TO CLOSE

Bruns General Hospital in Santa Fe, N. M., is scheduled for closing on December 31, the War Department has announced. There were twenty-two army general hospitals and Old Farms Convalescent Hospital, Avon, Conn., in operation as of September 27. At the height of the war there were sixty-five army general hospitals.

ARMY AWARDS AND COMMENDATIONS

Lieutenant Colonel Fratis L. Duff

The Legion of Merit was recently awarded to Lieut. Col. Fratis L. Duff, M. C., A. U. S., for outstanding work from April 1944 to April 1946, during which period he served as director of training, chief, department of tropical medicine, and assistant commandant, Army Air School of Aviation Medicine. He was responsible for many advancements in the administration of the school and contributed greatly to medical research. Colonel Duff, who is now serving as assistant commandant of the School of Aviation Medicine, graduated from the University of Oklahoma School of Medicine in 1939 and entered the service July 1, 1940.

Captain Edward B. Tyson

The Bronze Star was recently awarded to Capt. Edward B. Tyson, M. C., A. U. S., of Ocean City, N. J., for meritorious achievement in connection with military operations against the enemy on Luzon, Philippine Islands, from Jan. 9 to April 26, 1945. The citation states that "Captain Tyson, battalion surgeon, performed his duties in a superior manner. On several occasions he personally made reconnaissance to foremost positions to determine satisfactory routes of evacuation, render medical attention to men of front line positions and establish advance medical installations. As a result of his superior organizational ability, sound judgment and advance preparation for every emergency, loss of life of seriously wounded personnel was kept at a minimum. His unselfish efforts and devotion to duty reflect great credit on himself and the military service." Captain Tyson has also been awarded the Purple Heart and the Combat Medical Badge. He graduated at the University of Pennsylvania School of Medicine in 1941 and entered the service Aug. 1, 1942.

Lieutenant Colonel Elton R. Blaisdell

The Bronze Star medal was recently awarded to Lieut. Col. Elton R. Blaisdell of Portland, Maine, "for meritorious service in connection with military operations, as chief of medical service, 67th General Hospital, from Dec. 5, 1942 to May 8, 1945. Lieutenant Colonel Blaisdell," stated the citation, "was directly responsible for the organization and training of the personnel of his section and for the treatment of all medical cases admitted to the hospital. His broad professional knowledge and untiring devotion to duty reflect high credit on himself and the armed forces of the United States." Dr. Blaisdell graduated from Bowdoin Medical College in 1915 and entered the service Sept. 1, 1942.

Major Harry T. Zankel

The Commendation Ribbon was recently awarded to Major Harry T. Zankel of Brooklyn. The citation read, in part, "Your service with the Medical Department when compared with others of the same grade of similar position has been exceptional, and I wish to commend you for your outstanding contribution as chief of physical therapy and occupational therapy sections, LaGarde General Hospital, New Orleans, from July 1944 to September 1945." Dr. Zankel graduated from Long Island College of Medicine, Brooklyn, in 1925 and since his release from the service he has become chief of physical medicine and medical rehabilitation at Crile Veterans General Hospital, Cleveland.

VETERANS ADMINISTRATION

GENERAL HOSPITAL AT ATLANTA

The Veterans Administration announces that the President and the Federal Board of Hospitalization have approved the construction of a 750 bed general medical and surgical hospital at Atlanta, Ga., for treatment of veterans in that area, subject to the availability of funds, and that the plans for the construction of a 333 bed addition to the present Veterans Administration hospital in Atlanta have been canceled. The existing 317 bed general medical and surgical hospital at Atlanta will be converted to a hospital for the treatment of chronic general medical and surgical patients and will be operated as an integrated unit of the new hospital. The site has not yet been selected, although it is desirable that the general medical and surgical activities of the Veterans Administration in the city be located as close as possible to Emory University Medical School in order to insure the active cooperation of medical personnel as consultants and residents. The great distance of the present hospital from the medical school precludes this factor, but it will serve efficiently as a hospital for the care of chronic cases.

HOSPITALS IN NEW YORK

Specifications for three veterans' hospitals in New York State have been approved by the Office of the Army Chief of Engineers and by the Veterans Administration. They are to be located at historic Fort Hamilton in Brooklyn, at Albany and at Buffalo and are part of the $600,000,000 construction program involving 76 hospitals and 23 major additions undertaken for the Veterans Administration by the army engineers. Each of the three hospitals will contain 1,000 beds, of which 800 are for general medical and surgical patients and 200 for neuropsychiatric patients. All three are of fireproof construction and embody the most modern hospital criteria developed as a result of experience in the last war. All three are designed to furnish utmost in care and comfort to the veteran patients.

The Fort Hamilton hospital will be located on a beautiful stretch of ground directly across the bay from Sandy Hook. The Albany hospital will be located on a site of about 20 acres near the geographic center of the city and across New Scotland Avenue from the Albany City Hospital. In Buffalo the site is in the northeast section of the city. The back campus and the athletic field of the University of Buffalo are located directly across Bailey Avenue. The remainder of the surrounding area is a first class residential district. The main building on each site will consist of a basement and ten other complete floors. The Veterans Administration hospital program to be carried out by the army engineers is said to be the largest hospital program in history.

COMPENSATION FOR WIDOWS AND CHILDREN

The Veterans Administration has announced that the widows and about 90,000 children of husbands and fathers who died as a result of service in the second world war are receiving monthly compensation benefits. The compensation for each widow is $60 per month and $18 for one child plus $15.60 for any additional children. If both parents are dead the child's legal guardian receives $30 per month. If there are two children the guardian receives $45.60 plus $12 for each additional child.

INCREASE IN VETERAN PATIENTS

The Veterans Administration announced October 7 that there had been since V-J day a 29 per cent increase in the number of veteran patients in its hospitals and homes and in hospitals under contract. The total on September 12 was 104,612, compared with 81,081 on V-J day. The largest increase occurred among World War II veterans with non-service connected disabilities. The number of such patients rose from 10,338 to 24,437, an increase of 136 per cent.

TAKE OVER ANOTHER ARMY HOSPITAL

The Veterans Administration will take over the installation (formerly the Newton D. Baker General Hospital) at Martinsburg, W. Va., as soon as the War Department's inventory has been completed. The personnel including the physicians and nurses are now being recruited. It is believed that this hospital will be used by the Veterans Administration until new veterans' hospitals are completed in West Virginia and Pennsylvania.

PERSONALS

Dr. Horace C. Dodge, for several years superintendent of the veterans' hospital at Memphis, Tenn., was recently honored for his long service in the Veterans Administration when some 450 members of the staff and employees of the hospital presented him at an informal surprise ceremony with twenty-seven American beauty roses, one for each year of his service. Dr. Dodge will reach the retiring age in a few months and plans then to live in Asheville, N. C. He served in the medical corps of the Army overseas in World War I.

Dr. Joseph P. Cohen, Newton Center, Mass., a former lieutenant colonel in the Army Medical Corps and surgeon in chief of gynecology-obstetrics at Boston City Hospital for fifteen years, has been appointed clinical director of the Cushing Veterans Administration Hospital at Framingham, Mass. Previous to this appointment he was head of the gynecology department of the Beth Israel Hospital, Boston, clinical professor in gynecology at Tufts Medical School and instructor in obstetrics at Harvard Medical School. He is a veteran of twenty-seven months' overseas with the Army in England and with the military government in Normandy, Belgium, the Netherlands and in Augsburg, Germany, where he headed the public health section of the military government detachment. A graduate of Harvard University and Harvard Medical School, he was recently appointed honorary consulting obstetrician at the Boston City Hospital.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Arizona

Engelder, Arthur E.	Tucson
Henderson, Charles E.	Phoenix
Sitkin, Robert S.	Phoenix
Stacey, John W.	Tucson

California

Adams, Elliott L.	Lodi
Addison, Cornelius P.	Culver City
Aker, Cecil G.	Santa Ana
Allington, Robert R.	Los Angeles
Anderman, Lester B.	Los Angeles
Beardsley, Lloyd C. Jr.	Altadena
Benjamin, MacBroom	Los Angeles
Bogdonovich, Andrew C.	San Francisco
Bolkovatz, Joseph F.	Fresno
Brode, William R.	San Francisco
Campbell, Wallace D.	Glendale
Daniels, Charles J.	Los Angeles
Dean, James S.	Los Angeles
Dodson, John W.	Los Angeles
Dooley, Robert F.	San Francisco
Duisenberg, Charles E.	Los Gatos
Ferree, Arthur C.	Brea
Gilrane, Joseph J.	Pasadena
Harp, Vernon C. Jr.	Los Angeles
Hoo, Lawrence J.	San Francisco
Hosmer, Rawson F.	West Los Angeles
Jacques, Kenneth B.	Los Angeles
Jones, Warren E.	San Francisco
Kenney, Eugene W.	Oakland
Lansing, James D.	Los Angeles
Lawrence, Edgar C.	San Jose
Leeper, Roy W.	San Bernardino
Lewis, Charles F. Jr.	Oakland
MacFarlane, Eugene L.	Los Angeles
Marsh, Paul K. Jr.	Los Angeles
Morgan, John A.	Los Angeles
Preston, Francis G.	Visalia
Reed, Wallace A.	Los Angeles
Richter, Maurice R.	Los Angeles
Russell, Frank A.	Sacramento
Scharf, George	Los Angeles
Smith, Richard C.	Alhambra
Wendt, Douglas D.	Santa Clara
Wood, Walter L. Jr.	Los Angeles
Zell, Harry J.	San Marino
Zimmerman, Murray C.	Whittier

Connecticut

Cherry, Joseph B.	Norwich
Mainer, Raymond G.	New Britain
O'Brasky, George H.	New Haven
Pasternak, Maxwell	New Haven

Delaware

Cruchley, Allan R.	Middletown
Dougherty, Charles J.	Wilmington
Goldberg, Maurice	Wilmington

District of Columbia

Barbour, Gerald M.	Washington
Berry, Lorenzo R.	Washington
Brick, Irving B.	Washington
Crilley, Francis J. Jr.	Washington
Cromer, Horace E. Jr.	Washington
Grollman, Jaye J.	Washington
Hadley, Gilbert G.	Washington
Mitchell, Edwin C.	Washington
Moore, Granville N.	Washington

Florida

Crosslin, Neill O.	Daytona Beach
Dickey, James W. Jr.	Fort Lauderdale
Finner, Richard W.	Tallahassee
Rosenfeld, Charles	Miami Beach

Idaho

Jenkins, Robert D.	Boise
Mabey, Joseph F.	Malad City
Ojers, Gaylord W.	Twin Falls
Packer, Clyde D.	Rexburg
Potts, Claude H. Jr.	Coeur d'Alene

Illinois

Abbott, Gordon W.	Elgin
Allison, Olaf W.	Danville
Anderson, Enor G.	Rockford
Banks, Sam W.	Chicago
Barter, Robert H.	Harvard
Carlo, Joseph F.	Calumet City
Carney, John F.	Peoria
Crost, Edwin A.	Chicago
De Pasquale, Leonardo	Chicago
Fein, Alfred L.	Chicago
Frye, Jacob A. Jr.	Evanston
Goldberg, Erwin L.	Chicago
Greenspon, Irwin L.	Chicago
Katz, Julius	Alton
Makinson, James. T.	Chicago
Modica, Charles S.	Chicago
Naughton, Thomas J.	Chicago
Plassman, Walter P.	Elmhurst
Pope, John P.	Benton
Przepiorski, John B.	Chicago
Reaney, Burnell V.	Chicago
Sherrick, Joseph C.	Monmouth
Shimizu, Keichi	Chicago
Smith, Paul E.	Palestine
Spiteri, William B.	Chicago
Tuttle, Warren D.	Harrisburg
Venckus, Julius	Chicago
Welch, William B.	Chicago

Indiana

Aldrich, Harry D.	Angola
Boerger, Victor L.	Fort Wayne
Carlson, Norman R.	Michigan City
Freed, John E. Jr.	Terre Haute
Gillespie, Charles F.	Indianapolis
Griffith, James W.	Sheridan
Muhleman, Charles E.	LaPorte
Raines, Dale S.	Terre Haute
Stayton, Chester A.	Indianapolis

Iowa

Buchman, Delbert M.	Ottumwa
Clothier, John G.	Perry
Evers, Lorance B.	Iowa City
Mieras, Marion D.	LeMars

Kansas

Aldis, Henry	Kansas City
Arthur, John M. III	Kansas City
Bair, Howard V.	Wichita
Baumhardt, Edward E.	Hutchinson
Buser, Julian W.	Wichita
Christian, Edward R.	Rozel
Gleason, Kenneth J.	Topeka
Glicksman, Herbert Y.	Topeka
Hoopingarner, James L.	Baldwin City
McIntire, Robert W.	Olathe
MacQueen, John C.	Manhattan
Thacher, Luin K.	Waterville
Weed, Randal	Lawrence

Kentucky

Donnelly, Joseph L.	Ft. Thomas
Galvin, Ross M.	Louisville
Harris, Raymond H.	Lexington
Holbrook, Thomas J.	Kentucky
Mudd, Richard E.	New Haven
Payne, Walter A. Jr.	Corbin
Roby, Alma L.	Mt. Vernon
Rosso, Weymar A.	Louisville

Louisiana

Adam, Alfred L.	New Orleans
Anderson, Charles E. Jr.	Shreveport
Bowers, Sireno E. Jr.	Boyce
Clark, Archibald F. Jr.	New Orleans
Culotta, Vincent A.	New Orleans
Davis, Julius T. Jr.	New Orleans
Ferguson, Edward B. Jr.	New Orleans
Johnson, Clay H.	Shreveport
Vincent, Richard W.	Sulphur
Wiernik, Harris	New Orleans

Massachusetts

Adams, Crawford W.	Longmeadow
Allen, Fred H. Jr.	Chestnut Hill
Allendorf, Francis J.	Walpole
Bowditch, Sarah H.	Cambridge
Buckley, William R.	Medford
Corcoran, John J.	West Roxbury
Crocker, Oscar	Pepperell
McNichols, Michael T.	Cambridge
Ossen, Paul I.	Everett
Richardson, Edward R.	Brookline
Saunders, Gordon A.	Arlington
Sweeny, Donald N. Jr.	Boston
Tighe, Thomas J. G.	Lowell
Warren, Richard	Boston
Zamcheck, Norman	Swampscott

Michigan

Alexander, Allen	Detroit
Beigler, Jerome S.	Detroit
Cook, Hugh K.	Alpena
Dodds, Norman L.	Detroit
Easterly, Robert L.	Ann Arbor
Elliott, Lyle D.	Ann Arbor
Evans, William A. Jr.	Detroit
Kearney, Joseph B.	Grand Rapids
Latourette, Howard B.	Flint
Miller, Sidney S.	Dearborn
Pendy, George V.	Detroit
Purcell, Francis L. Jr.	Ann Arbor
Reames, Harold R.	Grand Ledge
Schroeder, John M.	Vulcan
Trapasso, Tony J.	Sault Ste. Marie
Walters, John F.	Battle Creek
Webster, William O.	Ionia
Weeks, Vernon L.	Detroit

Minnesota

Anderson, Franklin C.	Cloquet
Browne, Harry C.	Rochester
Brussell, Albert S.	St. Paul
Chucker, George N.	Bovey
Church, John M.	Minneapolis
Custer, Monford D. Jr.	Rochester
Eklund, Alfred W.	Mt. Iron
Hestenes, Erling G.	Northfield
Jacobs, Lyle S.	Minneapolis
Kearney, Rochfort W.	Mankato
McCloud, Charles N. Jr.	St. Paul
Neander, John F.	St. Paul
Noonan, Dan F.	Minneapolis
Rice, Fred A.	St. Cloud
Sher, Lewis	Minneapolis

Missouri

Alsobrook, Thomas W.	St. Louis
Andrews, Berneil W.	St. Joseph
Baker, Cecil C.	St. Louis
Birsner, Frank H.	St. Louis
Blaney, Loren F.	St. Louis
Blumenthal, Herman T.	St. Louis
Bristow, Robert B.	Princeton
Daley, Lyle M.	Hamilton
Dillon, John B.	St. Louis
Esslinger, Arthur T.	Clayton
Hageman, Paul O.	Clayton
Holden, Raymond F. Jr.	St. Louis
Hutcheson, Zenas W., Jr.	Bolivar
Levey, Harry B.	Kansas City
Limbaugh, Walter R.	Hayti
McRaven, Claude	Marston
Magness, Guy N.	University City
Martens, Irvin J.	University City
Petersen, Drew M.	St. Louis
Trowbridge, Barnard C.	Kansas City
Weinhaus, Robert S.	St. Louis
Zinn, Houston J.	Stotts City

Montana

Coriell, Lewis L.	Stanford
Graham, John H.	Billings
McCartney, Charles P.	Bozeman
Welch, John L.	Bozeman

PHYSICIANS SEPARATED FROM SERVICE

Nebraska

Brewster, Donald E.	Holdrege
Heiser, Ervin N.	Lincoln
Meyer, Leslie C.	Omaha
Round, John N.	Ord
Schilke, Elliott W.	Daykin
Sonnenberg, Alvin F.	Lincoln
Thomas, Richard L.	Hebron
Wilson, Rex W.	Peru
Wittstruck, Kenneth P.	Lincoln

New Jersey

Albert, Sidney	Lakewood
Byrne, John J.	Morristown
Carbone, Hubert A.	Orange
Dembinski, Thomas H.	Trenton
McKinney, Delbert W.	Mount Holly
Mason, Alvin S. Jr.	Salem
Murphy, Arthur G.	Upper Montclair
Silver, Albert M.	West Orange
Silver, Michael W.	Paterson

New York

Abelson, Albert	Forrest Hills
Abelson, Louis C.	Arverne, L.I.
Ackerman, Jacob H.	Bronx
Alverson, G. Carl Jr.	Syracuse
Ameduri, Ardow	Utica
Anderson, Hugh G.	Troy
Brugman, Robert B.	New York
Canizares, Orlando	New York
Cassino, Frank A.	Richmond Hill
Davis, Harold J.	Nassau
Duncan, Peter A.	New York
Feldman, F.	New York
Friedlich, Allan L.	New York
Hellman, Jack M.	Watertown
Ingham, Harrington V.	New York
Janoff, Lawrence A.	New York
Kien, George J.	New York
Maisel, John J.	Buffalo
Masselink, Rollo J.	New York
Meirowsky, Arnold M.	Albany
O'Toole, John S.	Potsdam
Rummel, Frank J.	Hollis, L. I.
Ryan, Raymond C.	Jamaica, L. I.
Sabo, Jack T.	New York
Sokoloff, Solomon	Brooklyn
Solomon, A. Alfred	New York
Thurman, George E.	New York

North Carolina

Gutmann, Helmut R.	Chapel Hill
Nifong, Frank M.	Winston-Salem

North Dakota

Gunderson, Robert L.	Aneta
Hoag, Richard M.	Bismarck
McCoy, Kenneth L.	Wildrose
Ruud, Edward T.	Grand Forks

Ohio

Anderson, Gilbert I.	Cleveland
Anderson, Hugh R. Jr.	Cleveland
Besst, Stacey A.	Canton
Brown, Frank A. Jr.	Cincinnati
Calloway, Arthur E.	Columbus
Daley, James B.	Niles
Hawley, Sherman R.	Toledo
Ickes, Howard J.	Canton
Kadull, Paul J.	Cleveland
Kaufman, Joseph W.	Newton Falls
Lehmiller, Karl L.	Stark
Leslie, Roland A.	Lockland
Mahaffey, Howard W.	Columbus
Morris, Lucien E.	Cleveland Heights
Pierson, Marshall J.	Akron
Proudfit, William L.	Cleveland
Roach, Frederick E.	Lakewood
Schmidt, Delbert C.	Newark
Spears, George N.	Ironton
Sprigley, Robert S.	Athens
Test, Pasquale S.	Youngstown
Vernier, Paul C.	Stryker
Waag, Donald A.	Dayton

Oklahoma

Adelman, Frank L.	Haskell
Ambrister, Jerome W.	Norman
Graybill, Charles S.	Lawton
Harms, Edwin M.	Blackwell
Rollow, John A. III	Oklahoma City

Oregon

Adams, John C.	Portland
Atkins, Charles B.	Portland
Beber, Ernest F.	Portland
Berthelsdorf, Siegfried R.	Beaverton
Boyd, Harold M. E.	Portland
Brownell, Iverson O.	Ocean Lake
Callicrate, Dominic L. Jr.	Portland
Chesledon, Wayne A.	Portland
Cleary, Joseph P.	Portland
Done, Robert W.	Portland
Dunlap, Jack E.	Portland
Easton, John B.	Pendleton
Fagan, Philip J.	Portland
Galante, Peter J.	Chiloquin
Marbut, William M.	Hermiston
Needham, Winfield H.	Salem
Neurath, Otto	Portland
Parks, Earl W.	Portland
Rinehart, Robert E.	Wheeler
Rosenberg, Norman J.	Portland
Wood, Gregg D.	Portland

Pennsylvania

Allison, Jackson W.	York
Alpert, Zola S.	Ellwood City
Altenhoff, William A.	Pittsburgh
Bannister, William B. Jr.	Imperial
Bender, John A.	Philadelphia
Brandt, John P.	Newport
Brunner, Austin F.	Newport
Campbell, William J.	State College
Chandler, Swithin Jr.	Paoli
Curtin, Jerome E.	Jeanette
Dierolf, Leon W. Jr.	Lancaster
Dodd, Elbert W. Jr.	Huntington
Hesch, Joseph A.	Aldan
Kolucki, Frank R.	Dickson City
Levitt, LeRoy P.	Plymouth
McClenahan, William U.	Philadelphia
McKee, Edward E.	Rochester
Medoff, Harold S.	Philadelphia
Piergeorge, Andrew R.	Pittsburgh
Saar, Gregory	Lancaster
Shearer, John L.	Pittsburgh
Sipe, William U.	Youngstown
Young, Ellis W.	Pittsburgh
Zimmerman, Rubin	Kingston

Rhode Island

Barrett, John T.	Providence
Blade, Milo O.	W. Warwick
Darrah, Harry E.	Providence
Ferraro, Douglas	Westerly
Hanna, Louis E.	Central Falls
Leet, William L.	Providence
Reich, Jacob	Providence
Reid, William A.	Providence
Sheehan, Linus A.	Providence
Temple, Francis E.	Providence

South Dakota

Franz, Elmer M.	Sioux Falls
Gilbert, Freeman J.	Belle Fourche
Hanten, Stephen J.	Watertown
Manning, Don H.	Custer
Seacat, Dennis H.	Alexander
Seacat, James H.	Alexander

Tennessee

Barnwell, Columbus H.	Chattanooga
Ellis, Thomas J.	Nashville
Reed, John S.	Kingsport
Spaulding, Joe B.	Memphis
Webb, Claude R.	Memphis
Williams, Edwin L.	Maryville

Texas

Abrams, Raymond H.	Dallas
Adams, Walter B. Jr.	Wichita Falls
Alexander, Arthur B.	Spur
Allen, John C.	Henderson
Boice, Edward H.	Houston
Connor, Marvin M.	Cumby
Davis, Roy N.	El Paso
Harkins, James E.	Dallas
Kidd, Frank H. Jr.	Dallas
Russo, Galileo M.	Waco
Terry, Jay G.	Dallas
Woods, Haddon B.	Refugio

Utah

Feeny, Thomas M.	Ogden
Jackson, Elvon G.	Salt Lake City
Jensen, Gordon M.	Hyrum
Peterson, Preston H.	Salt Lake City
Soffe, George W.	Bountiful
Spendlove, George A.	Richfield
Steed, Walter D.	Clearfield

Virginia

Blunt, Charles P. III	Lynchburg
Boling, John S.	Burkes Garden
Dunn, Edward H.	Portsmouth
Irwin, Carl W.	Harrisonburg
Jacobson, Abraham M.	Roanoke
Moorman, John H. Jr.	Harrisonburg
Nicklin, Walter S. Jr.	Alexandria
Shearburn, Edwin W.	Charlottesville
Smith, William C.	Creeds
Tucker, Weir M.	Richmond
Twyman, James B.	Charlottesville
Viccellio, Asa W.	Chatham

Washington

Anderson, Edward R.	Tacoma
Burns, Francis J.	Spokane
Gray, Cary P.	Longview
Hartsuck, David S.	Olympia
Irwin, John R.	Seattle
Ritter, Vern W.	Seattle
Salter, Edgar R.	Spokane
Wilson, Lawrence M.	Olympia
Wolf, Howard H.	Seattle

West Virginia

Antalis, Angelo J.	Weirton
Ashton, Dudley C.	Beckley
Costanzo, Vincent A.	Wheeling
Evans, Edward J.	Huntington
Harshbarger, Rodger W.	St. Albans
Hogshead, Ralph Jr.	Mammoth
McDonald, Brown Jr.	Montgomery
Mesaros, Paul Jr.	Follansbee
Miller, French R.	Wheeling
Moel, Morris	Huntington
Mullens, Henry S.	Wayne

Wisconsin

Butz, Robert C.	Darlington
Fischer, William A.	Madison
Frey, William B.	Fox Lake
Gissal, Frederick W.	Sussex
Murphy, Joseph E.	Milwaukee
Poser, John F.	Columbus
Schneider, O. Mark	Independence
Tax, Archie H.	Milwaukee
Yordy, Frank S.	Fond du Lac

Wyoming

Enterline, Joseph D.	Casper
Horton, William O.	Newcastle
Sanders, Reon H.	Pine Bluff
Simon, Felix E.	Riverton
Stanfield, Clyde E.	Cheyenne
Stewart, John C.	Thermopolis

Canal Zone

Senzer, David	Ancon

Canada

Chasse, Nathaniel J.	Henri Levis P. 2

MEDICAL OFFICERS RELEASED BY THE NAVY

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

Alabama

Alford, Almond W..........Birmingham
Blackburn, Lester H ....Tuscumbia
Broadhead, Hal D..........Montgomery
Darden, Samson H. Jr........Tuscaloosa
Day, Charles H..................Decatur
Douglas, Gilbert F. Jr.......Birmingham
Hudson, Perry B...........Montgomery
Mighell, Joseph R. III...........Mobile
Richardson, William R......Birmingham

California

Ahnlund, Nels W...............San Jose
Allen, Richard G................Oakland
Arnstein, Lawrence H.....San Francisco
Bain, James B..................Coronado
Barton, Richard T..................Vista
Beem, Richard T...........Los Angeles
Craig, John M.............San Fernando
Edwards, Robert L....Mendocino County
Goldberg, Isadore M. ......Los Angeles
Greer, William L...........Los Angeles
Hayden, Joseph D...........Long Beach
Hutchinson, Glenn D...........San Jose
Kasch, James W...................Ukiah
Kreutzer, Frederick L.....San Francisco
Likos, Joseph J.............Los Angeles
Long, Albert E............Laguna Beach
Mantele, Kenneth A.........Los Angeles
Maronde, Robert F..........Los Angeles
Marsh, Earle M...........San Francisco
Neumann, Roy A..................Visalia
O'Donnell, Bernard V............Vallejo
Pribus, Frederick T.........Los Angeles
Reinertsen, Bernhard R.....Los Angeles
Sanderson, Herbert C.....San Francisco
Schultz, Ernest B.........Laguna Beach

Colorado

Bigelow, Eugene V. ....Denver
Boyd; Thomas M...................Denver
Cassidy, Charles A..............Denver
Danahey, Lawrence K..........Denver
Greiner, David J.................Denver
Harding, Dean H.................Denver
Hirschberg, James C...Glenwood Springs
Kemper, Clarence M ....Boulder
Maul, Eugene M...................Denver
Spencer, John R..................Denver
Thurston, Walter D..............Denver
Walker, Robert B...............Gunnison

District of Columbia

Adams, George D............Washington
Bradley, Joseph W...........Washington
Cimmino, Christian V........Washington
Daley, Edmund F.............Washington
Dorman, Hamilton P........Washington
Milkie, Frederick E.........Washington
Skinner, James W...........Washington
Wharton, Ulysses S.........Washington
Zeller, William W...........Washington

Illinois

Aaberg, Monrad E.......Peoria Heights
Andresen, Richard H............Chicago
Bakos, Augustus C. P...........Chicago
Becker, Robert M...............Chicago
Dritz, Harvey F..................Chicago
Eiseman, Charles............Northbrook
Frank, Hugh A....................Chicago
Frankovelgia, N. Richard.......Chicago
Hooker, James W...........Springfield
Horton, Thomas C. Jr..........Chicago
Johnson, LeBaron P............Chicago
Magill, Hubert C................Decatur
Manson, Almon A................Chicago
Marlay, Myron G................Chicago
Martins, James K...............Chicago
Petrus, Edmund A...............Chicago
Schiff, George N.................Chicago
Swigart, LaVern L..............Chicago
Yanow, Mitchell...............Madison

Indiana

Brennan, James E...............Bedford
Custis, Donald L..................Goshen
Davis, Joseph B...................Marion
Ganser, Richard A...........Mishawaka
McDonald, Frank C..............Linton
Ridgway, William L..........Evansville
Strange, Dempsey C.........Indianapolis
Williams, Hugh L...........Martinsville

Kansas

Atherton, Lytle D.............Louisville
Baecker, Marvin P..........Kansas City
Bartell, Charles B...............Topeka
Fletcher, Louis R.............Scott City
Floyd, Glenn......................Sedan
Howard, Richard A. R....Arkansas City
Iwig, Samuel C. Jr..............Topeka
Klassen, Daniel S................Lehigh
McClure, James A...............Topeka
McFarland, Louis R..........El Dorado
Mallory, Joseph R.............Arlington
Muck, Floyd E..............Clay Center
Neis, Harry B...................Wellsville
Perll, Maurice F................Frankfort
Shepanek, Leonard A...........Emporia
Williot, Raymond G.........Clay Center

Louisiana

Barnett, Dalcho D..........Baton Rouge
Hearin, Willard C. Jr......New Orleans
Kelly, Roy A.................Destrehan
Knapp, Leonard K.........Lake Charles
McCormick, Joseph H. Jr.......Monroe
Nunez, James R................Abbeville
Plauche, John B..............Morganza
St. Romain, Murphy J., Jr..New Orleans
Sartor, Fred W......................Alto
Simmons, William M.......Baton Rouge
Storer, John J......................Iowa
Torre, Douglas P..........New Orleans
Tugwell, Otis L. Jr..........Farmerville
Wells, Wilbur G..................Colfax

Massachusetts

Arbetter, Albert H.........Chestnut Hill
Beers, Sherman J..............Plymouth
Benton, Philip E................Orleans
Bering, Edgar A., Jr..........Brookline
Brown, Chester W............Worcester
Dole, Vincent P. Jr............Brookline
Emerson, Roger H.....South Weymouth
Gevalt, Frederick C., Jr.....W. Roxbury
Gibson, Sam T....................Boston
Grenda, Albin N................Lawrence
Hagerty, Robert F................Boston
Hale, George I....................Boston
Little, David M. J............Cambridge
Lovell, Charles V. duB........Brookline
Lydon, Roy T.....................Norwood
MacGillivray, Donald J.......Dorchester
McLaughlin, James A.......Ocean Bluff
Mason, Andrew V................Boston
Paul, Oglesby......................Boston
Robinson, Burton D............Brighton
Romney, Seymour L...........Brookline
Rosen, Sidney W.................Everett
Sands, Kenneth F................Boston
Sexton, Richard P............Winchester
Stoddard, Eben..............Marblehead
Sullivan, Donel R.............Brookline
Vail, William D..................Hyannis
Watters, Franklin B.......Longmeadow

Michigan

Bauer, Lester E....................Athens
Baum, William C................Saginaw
Borin, Maurice C.................Detroit
Huggett, Clare C..................Lansing
Moore, Earl V. Jr............Ann Arbor
Rawlings, Donaldson F.......Stevensville
Ries, Richard G...................Detroit
Whitehouse, Keith H...........Morenci

New Jersey

Altschuler, Bernard M..........Bayonne
Benko, George S. M.......Perth Amboy
Breeden, Brewster C.........Glen Ridge
Catainia, Joseph P..............Garfield
Closson, Edward W. Jr.....Lambertville
Comando, Edward N.........Maplewood
Halsted, George O............Englewood
Hughes, David W..............Cape May
Jacobs, Alan L.....................Union
Kain, Thomas M. Jr.......Collingswood
Kolarsick, Albert J.............Newark
Morris, Robert S...........Merchantville
Murray, Simon D..............Arlington
Neil, Carleton M..........North Bergen
Parker, Philip J..................Newark
Sattenspiel, Edward..........Jersey City
Siss, Alfred A..................Paterson

New York

Ayer, John L...................Syracuse
Barrett, John L. Jr..............Minetto
Butler, John J.................Rochester
Carmel, Philip D...............Brooklyn
Collins, Robert M..............Potsdam
Crohn, Edward B...........New York
Deming, Quentin B..........New York
Eaton, Earl H. Jr............Bronxville
Edward, Jess...................Freeport
Fett, Herbert Charles, Jr.......Brooklyn
Gonzales, Robert T......Woodside, L. I.
Grella, Anthony V..........Great Neck
Haswell, Howard Pruyn......Rochester
Haug, Chester A................Albany
Jones, Hyzer W. Jr...........Rochester
Katz, Julius H..................Beverly
Koss, Theodore W.............Hamburg
Ladin, Philip..................New York
Lerner, Hobart A.............Rochester
Lombardo, Anthony J.........New York
Martin, Geoffrey M...........New York
Meehan, Donald J............New York.
Nilsson, Donald E......Rockville Center
O'Shea, James A..............Brookyln
Pearce, Frank A................Yonkers
Pullman, James Jr............Mattituck
Reader, George G.................. Rye
Ruva, Joseph J.................Syracuse
Schiffer, Morton A...........New York
Smith, Eugene J................Brooklyn
Spence, Harold G..............Riverdale
Vigorita, John L...............Brooklyn
Walker, William H............Lynbrook

Pennsylvania

Beierle, Joseph M.............Pittsburgh
Brenner, Angus L....Aldan, Clifton Hts.
Cole, Walter C........................Erie
Edwards, Frank T...........Pittsburgh
Flanagan, John C...........Philadelphia
Hartner, Earl..................Pittsburgh
Kirkland, William G.....Newton Square
Kneeland, Malcolm E.........Pittsburgh
Lentz, Edmund T.............Wyalusing
Loftus, Thomas A., Jr.......Philadelphia
Mayer, Donald F...............Wyncote
Miller, Andrew P............Philadelphia
Rosch, Julius C.................Altoona
Saracco, Thomas R..............Boston
Tomlinson, John L..........Philadelphia
Urie, John C..................Drexel Hill

West Virginia

Cooper, Harry F.....................Athens
Gatherum, David H.............Athens
Hunt, Russell B...............Clendenin
Hunter, Jack W.............Buckhannon
Menk, Karl F......................Holden
Mikita, William B...............Weirton
Slaughter, James F...........Charleston
Smith, Delbert C...............Rivesville
Vick, Clyde W. Jr............Jenkinjones
Walker, William D...........Charleston

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education and public health.)

ALABAMA

Changes in Health Officers.—Dr. James L. Carpenter, Huntsville, has been appointed health commissioner of Madison County.——Dr. Charles J. Roehm, formerly of Eureka, Ill., has been appointed health officer of Walton County.——Dr. Claude D. Killian, Fort Payne, has resigned as acting health officer of DeKalb County.

Radiologists Organize. — The Alabama Radiological Society was recently organized with Dr. James A. Meadows, Birmingham, president; Dr. Courtney S. Stickley, Montgomery, vice president, and Dr. John D. Peake, Mobile, secretary-treasurer. The next meeting will be held during the annual session of the Alabama State Medical Association.

CALIFORNIA

Personal.—The employees of the San Francisco City and County Department of Health recently presented Dr. Jacob C. Geiger with a scroll to mark his fifteenth anniversary as director and in recognition of his services.——Dr. Mary B. Dale, Pasadena, has been appointed epidemiologist for the Los Angeles County Health Department. Newspapers report that she is the first woman to hold such a position in the county.

Public Health Appointments.—The University of California School of Public Health announces these new appointments: Dorothy B. Nyswander, Ph.D., professor of health education; Dr. Leon Lewis, recently released from military service and formerly of Newark, N. J., and New York, professor of industrial health, and Miss Edith Lindsay, recently a member of the faculty at Mills College, assistant professor in hygiene.

Grant for Physical Therapy Training.—Increased enrolment of students in the physical therapy training course of the University of California Medical School, San Francisco, has been made possible by a grant of $6,336 from the National Foundation for Infantile Paralysis, New York. Among the teaching essentials aided, the new grant will provide 236 semester hours in anatomy, physics, pathology, physiology, nursing, pediatrics and neurology. The courses, given under the direction of Dr. Frances Baker, San Francisco, include specialized treatment of infantile paralysis patients. To date, the national foundation has provided the University of California Medical School with $14,336 to aid in the training of physical therapists at that institution.

Proposed Development of Tuberculosis Facilities.—Within the next two years the Jewish Consumptive Relief Association of Los Angeles will undertake to raise $7,215,000 for the creation of a national medical center on the site of the Los Angeles Sanatorium at Duarte. The plan to extend the present tuberculosis facilities of the sanatorium to 350 beds and the establishment of 350 additional beds for the treatment of other diseases was approved unanimously at the Victory Convention of the Jewish Consumptive Relief Association, which was held in Los Angeles in August. The plan calls for the further expansion of the program, when funds are made available, to include a thoroughly equipped research department and eventually a medical school, a school for the training of medical technicians and a nurses' training school.

GEORGIA

Grants for Research.—Members of the faculty of the University of Georgia School of Medicine, Augusta, through grants of money received from the U. S. Public Health Service, will be able to carry forward several important research projects, it was recently announced. Dr. Robert B. Greenblatt and Robert B. Dienst, Ph.D., were allocated $5,550 for study of venereal diseases other than syphilis and gonorrhea. Dr. Virgil P. W. Sydenstricker receives $12,550 for research in internal medicine. An award of $14,375 was made to Dr. Harvey M. Cleckley for research in psychiatry. A part of the program will deal with electroencephalography. Dr. Cleckley's work in that field, under the new grant, will be the first studies of that kind made at the medical school.

Benefactors to Library Honored.—Bronze plaques memorializing Dr. William J. Young, Fairfax, S. C., Dr. Flournoy Carter, Augusta, and Mrs. Julia Carter Moore will be placed in the library of the University of Georgia School of Medicine, Augusta, soon. Dr. Young left a legacy of $25,000 to the medical school library when he died in 1920. Mrs. Moore bequeathed $10,000 to the medical school library in 1926 as a memorial to her father, the late Dr. Flournoy Carter. The bequest honoring Dr. Carter was used in renovating the library, and a similar amount, given by the Rockefeller Foundation, was used to purchase new books. Most of the books now being purchased for the library are bought with the income from Dr. Young's legacy. The library now has 17,536 books and receives 240 current journals published in English, French and German. The plaques will be moved to the new library whenever a new building is added to the campus under plans now being considered.

ILLINOIS

Personal.—Dr. and Mrs. Mirza P. DuComb, Patoka, observed their fiftieth wedding anniversary August 31.——Nellie P. Watts, Ph.D., New York, has been appointed research pharmacologist at the Abbott Laboratories, North Chicago.

Chicago

Branch Meetings.—The North Side Branch of the Chicago Medical Society will be addressed November 7 at the Drake Hotel by Drs. Grayson L. Carroll, St. Louis, and Arthur Steindler, Iowa City, on "Bladder Tumors" and "Revised Concepts of Infantile Paralysis—Their Application to Management and Treatment" respectively. Subsequent meetings of the branch will be addressed by:

Dr. Stanley P. Reimann, Philadelphia, December 5, The Methyl Group and Cirrhosis of the Liver.
Dr. Virgil S. Counseller, Rochester, Minn., December 5, The Applications of Vaginal Hysterectomy.
Dr. Irving S. Wright, New York, February 6, The Use of Anticoagulant Therapy in the Treatment of Diseases of the Heart and Blood Vessels.
Dr. John B. Youmans, Chicago, April 3, Nutritional Deficiencies.

New Director of Health Service at Illinois.—Dr. Frederick C. Lendrum, assistant professor of medicine, University of Illinois College of Medicine, has been appointed director of the reorganized and expanded health service at the Professional Colleges of the University of Illinois. He succeeds Dr. Eduardo A. Hurtado, who resigned to return to private practice. The new director's staff will include Dr. Joseph H. Filip, recently released from service in the army, and Dr. Elsie H. Hartman. Functions of the health service include medical attention for on-the-job injuries of faculty and staff, examination of new students and employees, and examinations legally required in connection with sick benefits and the university's retirement system. Service facilities, now being greatly expanded after the part time arrangement in effect during the war, will be integrated with the teaching, research and treatment programs in the Professional Colleges, the hospitals and the clinics.

Speech and Hearing Program. — A new educational, research and clinical program in speech and hearing rehabilitation has been inaugurated by the University of Illinois College of Medicine. Herbert Koepp-Baker, Ph.D., recently released from the navy and formerly director of the Speech and Hearing Clinic at Pennsylvania State College, will serve as director and also as director of the new speech and rehabilitation division of the Illinois Eye and Ear Infirmary. In both the medical college and the infirmary the work will be supervised by Dr. Francis L. Lederer, head of the otolaryngology department and chief of that service in the eye and ear infirmary. Dr. Koepp-Baker's appointment, said to be the first of its kind in any major university, will immediately provide instruction and clinical experience in this highly specialized field for medical students, physicians and persons working in the closely correlated nonmedical branches of special education, psychology and social work. Both undergraduate and postgraduate instruction will be included in the educational program. On the postgraduate level ear, nose and throat specialists will be further trained in the correction of speech and hearing disabilities. In the nonmedical field professional speech therapists will be trained in the correction of defective hearing and speech. Clinical facilities at the university will be utilized in furthering an expanding research program.

Million Dollars for Cancer Research.—The Goldblatt Brothers Foundation has given $1,000,000 to establish the Nathan Goldblatt Memorial Hospital at the University of Chicago. As a clinical center the hospital will be devoted exclusively to the treatment of cancer and other neoplastic diseases. The hospital will be built on Ellis Avenue, just north of 59th Street, to connect with the surgical section of Billings Hospital of the university clinics. The Nathan Goldblatt memorial will be the only university hospital in the country with the entire staff engaged full time in cancer treatment and research The hospital also will be the focus of the University of Chicago s Committee on Cancer and its associated Committee on Normal and Neoplastic Growth which coordinate research on cancer in nine clinical and basic science departments In addition to the present research facilities significant additional resources will be added soon by the laboratories of the university's Institute of Radiobiology and Biophysics and its Institute of Nuclear Studies Both institutes already have complete staffs If conditions permit, construction of the hospital will begin next spring Preliminary plans call for a six story structure which probably will be increased to seven floors with basement and sub-basement The hospital will provide at least 50 beds in single and 2 bed rooms together with the usual service features necessary for the care of patients There will be two operating rooms an outpatient clinic offices and research laboratories for the staff diagnostic laboratories, administrative quarters reception rooms for patients and their relatives, and conference rooms for the staff and the scientists working under the Committee on Cancer and the Committee on Normal and Neoplastic Growth The Goldblatt Brothers Foundation donor of the hospital is a charitable trust established in 1936 by members of the Goldblatt family and is entirely *independent of the Goldblatt Brothers Department* Stores Nathan Goldblatt, in whose memory the gift is being made, died Nov 3, 1944

INDIANA

Physician's Memory Honored—The citizens of Rockville and Park County are collecting a fund to create a memorial to the memory of the late Dr Thomas J. Collings The money will be given to the Union Hospital, Terre Haute, to be used in the purchasing of equipment or in any other manner decided by the hospital authorities

Chester Bundy Heads Tuberculosis Control—Dr Chester M Bundy recently released from service with the U S Coast Guard, has been appointed director of the division of tuberculosis control, Indiana State Board of Health, Indianapolis He succeeds Dr Carl C Kuehn, Indianapolis, who has been granted a leave to study public health at the University of Michigan

LOUISIANA

New Professor of Pediatrics.—Dr Myron E. Wegman, assistant professor of clinical pediatrics at Cornell University Medical College, New York, and director of training and research bureau of child hygiene, New York City Department of Health has been appointed professor of pediatrics and head of the department in the Louisiana State University School of Medicine, New Orleans He succeeds the late Dr Chester A Stewart

MARYLAND

The Dohme Lectures—Dr N Hamilton Fairley, Wellcome professor of tropical medicine, University of London, will give the Dohme Lectures at the Johns Hopkins University School of Medicine, Baltimore, November 20 22 His subject will be 'Chemotherapy of Malaria"

Meetings of Academy of Medicine.—On September 9 the Silver Spring Academy of Medicine opened its 1946 1947 program with a talk by Dr Thomas N Carey, Baltimore, on 'Complications of Diabetes and Their Treatment" On October 7 the speakers were Capt Rupert H Draeger (MC), Lieut Comdr Eugene P Cronkite (MC), 'The Atom Bomb at Bikini' and Rear Admiral Thomas C Anderson (MC), 'The Naval Medical Service in the Pacific War" Other speakers will be

Dr Carlton N Price, Syracuse, N Y, November 4, Newer Concepts in Gynecology
Dr Brian B Blades St Louis, December 2, Vagotomy in the Treatment of Peptic Ulcer
Dr Charles F Geschickter, Baltimore April 7 Lesions of the Breast
Dr Roscoe R Spencer, Baltimore, May 5 Recent Research Work in Cancer
Dr Neil W Swinton Ann Arbor Mich, January 6 Carcinoma of the Colon and Rectum
Dr Winfred Overholser Boston February 3, Recent Developments in Psychiatric Diagnosis and Treatment
Dr Edward J Stieglitz Bethesda Md March 3, The Significance of Geriatrics

Health Department Activities.—Dr Nels A Nelson, assistant professor of venereal diseases at the Johns Hopkins University School of Hygiene and Public Health, Baltimore, and founder of the Massachusetts Neisserian Medical Society, has been appointed director of the bureau of venereal diseases in the Baltimore City Health Department Dr Henry F Buettner Baltimore, was recently named as acting director of the bureau of social hygiene in the city health department, *succeeding* Dr Humphrey Warren Buckler Dr Buettner, formerly full time health officer of the Western Health District, was recently released from military service Dr Charlotte Silverman, Baltimore, formerly epidemiologist, Massachusetts State Department of Public Health, has joined the city health department as assistant director to Dr Miriam E Brailey, Baltimore, in the bureau of tuberculosis Dr. Thomas B Turner, professor of bacteriology, Johns Hopkins School of Hygiene and Public Health, and Dr Allen F Voshell, professor of orthopedic surgery, University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, have been appointed consultants to the Baltimore department of health

MINNESOTA

Personal—Dr Sigsbee R Seljeskog Minneapolis, has been appointed superintendent of the Elizabeth Kenny Institute, Minneapolis succeeding Dr Francis E Harrington

Studies of Brucellosis—A research grant of $10,000 a year for three years has been made available to the Department of Medicine at the University of Minnesota Medical School, Minneapolis, by the U S Public Health Service for studies on brucellosis This research project is under the direction of Dr Wesley W Spink professor of medicine. Associated with him are Drs Wendell H Hall, Hartford, Conn, and Abraham I Braude Chicago Investigations are under way in an attempt to clarify the pathogenesis of brucellosis in human beings and a clinical and experimental evaluation of therapeutic agents In addition, epidemiologic studies are being extended

Physiologic Chemistry Setup in Separate Unit—Teaching and research in physiologic chemistry in the University of Minnesota Medical School Minneapolis was recently organized as a separate department with Dr Wallace D Armstrong, Minneapolis, as head Work in this field was formerly administered as a division of the department of physiology New appointments to the staff of the department include David Glick PhD Minneapolis, associate professor, Elizabeth Frame, PhD, and Saul L Cohen PhD assistant professors Other members of the department are Cyrus P Barnum Jr, PhD., Karl Sollner, PhD, and Walter O P Lundberg, PhD, associate professors and Charles I Carr, PhD, instructor

· MISSISSIPPI

State Board Awards New Fellowships.—On September 25 the Mississippi State Medical Education Board announced the names of twelve new recipients of fellowships awarded under the state s new program of assisting students in the study of medicine

Virginia Nishapter Biloxi accepted for first year at Tulane
Glenn D Baird Water Valley, who begins second year of medicine, University of Mississippi School of Medicine University
Jerrel W Benson Oakland, accepted for third year at Johns Hopkins University School of Medicine Baltimore
Marion Virginia Green Rolling Fork, who has finished first year of medicine at University of Mississippi
Aubrey Russell Harris Shannon, who has finished first year of medicine at University of Mississippi
Martin Edward Hinman Pascagoula who has finished his premedical studies
Alexander Watt Hulett Charleston accepted for first year at Tulane
James Louis McLain Jackson, accepted for first year at Louisiana State University School of Medicine New Orleans
Mary Frances Mayfield Laurel accepted for first year at Tulane
William Gaston Spence Jackson accepted for first year at Louisiana State University School of Medicine, New Orleans
Virginia Stinsel Stacy Ruleville, accepted for first year at University of Mississippi School of Medicine
George M Wilson Monticello who begins fourth year, University of Tennessee College of Medicine, Memphis

MISSOURI

Personal—Dr Gustave J Dammin recently released from military service where he had been in charge of the laboratory division in the Office of the Surgeon General, has been appointed assistant professor of internal medicine and assistant professor of pathology, Washington University School of Medicine, St Louis He will serve as director of the Central Diagnostic Laboratories at Barnes Hospital St Louis, and will aid in the teaching of laboratory diagnosis in the department of medicine The other half of his time will be devoted to research and teaching in the department of pathology

NEBRASKA

Cornerstone Laid for Children's Hospital—On September 28 the cornerstone of the Children's Memorial Hospital was laid with appropriate ceremonies by Henry Doorly publisher of the Omaha *World Herald* More than $520 000 has been raised for the complete project, but it will be necessary to raise another $100 000 during the coming winter, it was announced The *World Herald* initiated the project with a gift of $100,000 for the construction of a children's hospital on ground leased from the University of Nebraska College of Medicine. The 100 bed hospital is to be independent of the university and not a state institution (The Journal, Jan. 8, 1944, p. 114). Dr. Charles W. Poynter, dean emeritus, University of Nebraska College of Medicine, Omaha, was given particular credit in the development of the project.

NEW JERSEY

Grants for Research.—White Laboratories, Inc., Newark, has announced that its program for extramural research for the fiscal year 1946-1947 includes new grants or renewal of previous grants for experimental and clinical studies at the Jefferson Medical College, University of Pennsylvania School of Dentistry, Boston University School of Medicine, the Margaret Hague Maternity Hospital, Jersey City, Newark Beth Israel Hospital and other medical institutions. In the current fiscal year a sum approximating $40,000 has been allocated for such studies, which include problems related to bacteriology, oral medicine and surgery, hematology, nutrition, endocrinology and veterinary medicine.

NEW YORK

Physician Honored.—A dinner was held September 1 in honor of Dr. Chalmer J. Longstreet to mark his retirement after nearly thirty years' service as health officer of Binghamton. Dr. Ralph M. Vincent, Binghamton, district state health officer, was toastmaster. Dr. Paul B. Brooks, Albany, former deputy state health commissioner and the first "sanitary supervisor" of the Binghamton district, was a guest speaker. Dr. Victor W. Bergstrom, Binghamton, president of the Broome County Medical Society, spoke and commissioner of public safety Behan presented Dr. Longstreet with a gold wrist watch.

Teaching Day.—A cancer teaching day will be held at the Nelson House, Poughkeepsie, November 6, under the auspices of the Dutchess County Medical Society, Dutchess County Tumor Clinic, Tumor Clinic Association of the State of New York, Medical Society of the State of New York and the division of cancer control of the New York State Department of Health. Among the speakers will be:

Dr. Chester O. Davison, Poughkeepsie, Five Year Cancer Survivals: The Experience of the Dutchess County Tumor Clinic.
Dr. Joseph H. Farrow, New York City, Diagnostic and Therapeutic Problems in Cancer: The Experience of the Dutchess County Tumor Clinic.
Dr. Martha E. Howe, New York City, The Public Demand for Prevention and Early Diagnosis: A Sound Response.
Dr. George N. Papanicolaou, New York City, Other Types of Cell Smear in Diagnosis of Cancer.
Dr. Maurice Fremont-Smith, Boston, The Vaginal Smear in the Early Diagnosis of Cancer of the Uterus.

New York City

Personal.—Dr. Harold M. Teel is to join the medical staff of the American University of Beirut in Lebanon, it was announced by the Near East College Association September 30. Dr. Teel, visiting professor at the university, will assist in developing the departments of obstetrics and gynecology of the new $2,500,000 Dodge Medical Center.——Dr. Otto R. Pozdena, Woodside, N. Y., has been appointed acting registrar and director of the bureau of records, New York City Department of Health.

Jewish Hospital Affiliates with College of Medicine.—A teaching affiliation has been established between the Jewish Hospital of Brooklyn and the Long Island College of Medicine, Brooklyn, to provide senior students with a wider opportunity for intensive study in fields of particular interest to them. Students will be offered the choice of elective clerkships in surgery, obstetrics, pediatrics and pathology. The facilities of the Jewish Hospital with its 660 beds will be utilized for the instruction of students who elect a one or two month clerkship. This development marks a step toward the reestablishment of a normal peacetime curriculum, since such elective studies were not possible under the accelerated wartime program. The affiliation will be mutually advantageous to both institutions in forwarding medical research. The college now renders service to the people of Brooklyn through eleven affiliated hospitals and institutions where teaching services are maintained.

Well Adult Clinic Opened.—The formal opening of the Well Adult (Cancer Prevention) Clinic of the Hospital for Joint Diseases took place October 8. Dr. Harold B. Davidson, who is in charge of the clinic and attending gynecologist at the hospital, stated in a release to the press that the objective of the clinic is purely preventive and its procedures are diagnostic. It seeks to discover early symptoms and signs suggestive of cancer. The clinic does not offer any treatment. Whatever illness or disease may be discovered as a result of the examination is brought to the attention of the patient or the patient's physician, and the patient is advised to seek early advice and treatment. This clinic differs from other clinics in several essential aspects. People do not come to the clinic for relief from symptoms or conditions that are known to them but to be examined and studied when they are apparently in good health. The physical examination is by physicians in the several specialties and by technicians who do the laboratory and x-ray work. The creation of the Well Adult (Cancer Prevention) Clinic is the first step toward the inauguration at the Hospital for Joint Diseases of a disease prevention program.

OREGON

Grants Awarded Medical School.—The University of Oregon Medical School, Portland, department of pharmacology has recently received two grants for research. The Sandoz Chemical Works, Inc., New York, has provided an unrestricted grant of $2,000 for general research and for completion of studies on oxytocic and antiepileptic drugs, to be directed by Dr. Norman A. David, professor of pharmacology and head of the department, assisted by Dr. Anton C. Kirchhof and Nilkanth M. Phatak, Ph.D. The second grant of $5,000 is to be used jointly by the departments of pharmacology and otolaryngology and has been awarded by the Research Study Club and the Pacific Coast Otolaryngological Society, Los Angeles, for the purpose of investigating the effect of hormonal substances on the growth and development of the middle ear and to study the general problem of otosclerosis. This study will be under the supervision of Dr. Guy L. Boyden, professor of otolaryngology and Dr. Ben Vidgoff, research associate in pharmacology.

PENNSYLVANIA

Clinical Pathologists Organize.—Dr. William P. Belk, Philadelphia, was elected president; Dr. Fred O. Zillessen, Easton, vice president, and Dr. Henry F. Hunt, Danville, secretary and treasurer of the Pennsylvania Association of Clinical Pathologists, which was organized at a meeting held in Philadelphia, October 9. Active membership is open to graduates of medicine who are or have been actively engaged in the practice or teaching of pathology, clinical pathology or one of its subdivisions. Residents in pathology are eligible for associate membership.

State Hospital Survey.—With the appointment of Dr. Hubley R. Owen, Philadelphia, as director, a survey of the state's hospital facilities was launched. The study, which will be carried on by the Pennsylvania Committee on Hospital Facilities, Organization and Standards, was authorized by the governor May 6 when he appointed a nine member committee to determine the state's hospital facilities and needs. Dr. Owen, formerly director of health of Philadelphia, has for the past three years been director of medical services of the Philadelphia Board of Public Education, from which position he has been granted a leave to undertake the study.

Philadelphia

Chevalier Jackson Honored.—On October 7 the Cavalcade of America on its broadcast over NBC used a script entitled "That They May Live" based on the life of Dr. Chevalier Jackson, inventor of the bronchoscope and esophagoscope.

Campaign Against Diabetes.—On September 16 the department of public health, with the assistance of its advisory committee on health education, the Philadelphia Metabolic Association and the Philadelphia Diabetic Society, inaugurated an intensive educational campaign against diabetes.

New Professor of Medicine.—Dr. Richard A. Kern, recently released from the Navy Medical Corps, has been appointed professor and head of the department of medicine at the Temple University School of Medicine, and medical director of the Temple University Hospital. Dr. Kern succeeds Dr. Charles L. Brown, who has become dean of the Hahnemann Medical College (The Journal, August 24, p. 1448).

Seminar on Industrial Medicine and Surgery.—On October 22 the American Mutual Liability Insurance Company conducted a seminar on industrial medicine and surgery at the Benjamin Franklin Hotel. Among the speakers in a session devoted to the rehabilitation and reemployment of the physically handicapped were Edward P. Chester, Washington, D. C.; Dr. Bernard J. Alpers, Philadelphia, and Dr. Andre W. Reggio, Washington, D. C. Other speakers on the program included:

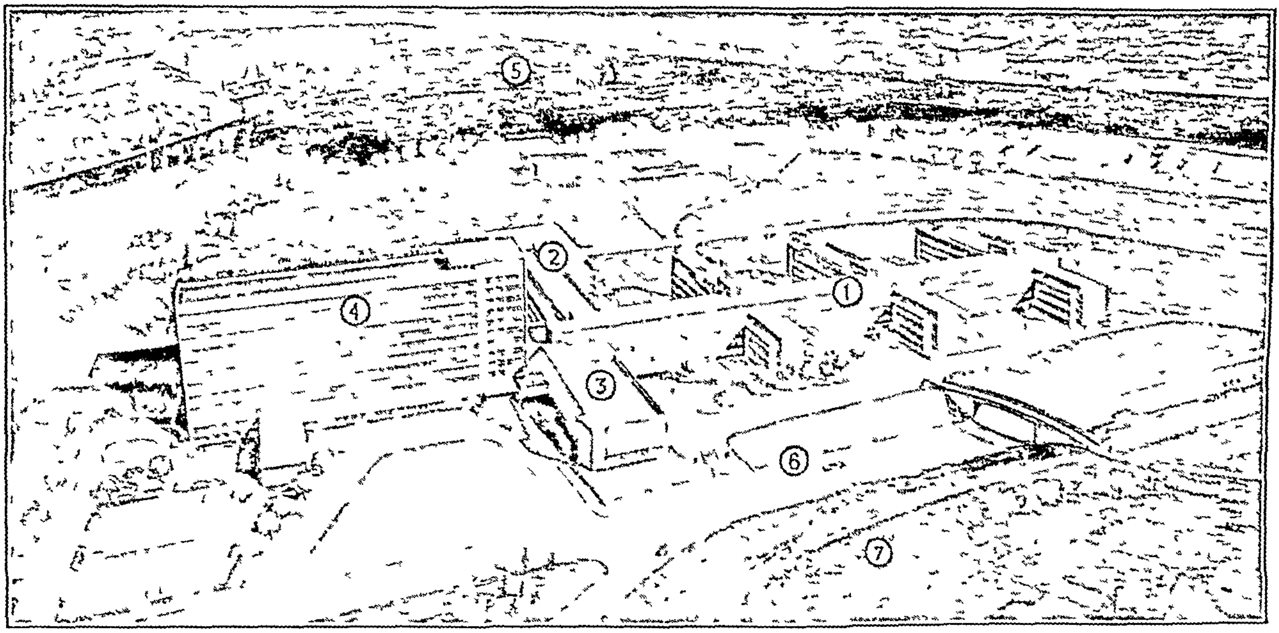
Dr. Henry C. Marble, Boston.
Dr. Connie M. Guion, New York.
Dr. Harrison L. McLaughlin, New York.
Dr. Allen F. Voshell, Baltimore.
Dr. Henry F. Ullrich, Baltimore.

WASHINGTON

New School of Medicine at Washington University.—The first class of fifty students has been admitted to the new School of Medicine at the University of Washington, Seattle. Instruction in the basic medical sciences for this class, as well as for the first class of dental students entering the new School of Dentistry at the same time, will be conducted in quarters allocated in the anatomy, chemistry, physiology and biology buildings on the University of Washington campus during the construction of new buildings for the division of health sciences. Departmental heads have been selected for all the basic medical science divisions, and the departments concerned with the immediate teaching program are well organized and adequately equipped to undertake excellent teaching and investigative activities. Appointments to date include the following personnel:

Anatomy
William F. Windle, Ph.D., professor and executive officer
Dr. John I. Worcester, professor
Dr. Howard B. Kellogg, associate professor
Dr. Frederick I. Schever, lecturer
Roland I. Becker, Ph.D., assistant professor
William W. Chambers, Ph.D., assistant professor
Dr. Robert J. Johnson, instructor
Dr. Newton B. Everett, instructor

Biochemistry
Earl R. Norris, Ph.D., professor and executive officer
Carl A. Kuether, Ph.D., assistant professor
James Mathies, M.S., associate



Projected medical, dental and nursing school for division of health sciences, University of Washington, Seattle: (1) Basic Medical Sciences, (2) Dental School laboratories and clinics, (3) library and auditorium, (4) university teaching hospital, (5) yacht basin, (6) Pacific Avenue, (7) main University of Washington campus.

Physiology
Theodore C. Ruch, professor and executive officer
Arthur W. Martin, Ph.D., associate professor
Julia G. Shahen, Ph.D., assistant professor
Loren D. Carlson, Ph.D., assistant professor.

Microbiology
Dr. Charles A. Evans, professor and executive officer
Bernard S. Henry, Ph.D., professor
Rachel L. Hoffstadt, D.Sc., professor
Russell S. Weiser, Ph.D., associate professor
Erling J. Ordal, Ph.D., associate professor
Howard C. Douglas, Ph.D., assistant professor.
Esther Duchow, B.S., associate

Pathology
Dr. Stuart W. Lippincott, professor and executive officer
Lester D. Ellerbrook, Ph.D., assistant professor
Dr. Walter A. Ricker, assistant professor

Pharmacology
Dr. James M. Dille, professor and executive officer
Dr. Daniel M. Green, associate professor

Librarian
Alderson Fry, B.L.Sc.

Plans for the medical and dental school buildings have progressed to the stage of advanced working drawings. The Board of Health Sciences and the University of Washington regents have approved the plans for the new medical center which will be located on the south end of the university campus between the Yacht Basin and Pacific Avenue. Basic medical sciences will be housed in a three story structure at the west end of the development. Library and auditorium facilities, laboratories and clinics for the school of dentistry are to be located immediately adjacent to the east, with the projected 400 bed University Teaching Hospital at the extreme east end. Maximum physical and functional integration has been considered in the development of the plans. The location of the medical center and the available land area are such that there will be ample room for expansion of facilities in the future. In 1945 the legislature of the state of Washington set aside an initial $3,750,000 with which the building program will be started as soon as plans are completed and contracts awarded. Additional funds will be requested from the next legislature for the completion of the project, which present estimates indicate will involve a total investment of from twelve to fifteen million dollars.

PUERTO RICO

Prevalence of Poliomyelitis.—Two hundred and twenty-one positive cases of poliomyelitis were registered in Puerto Rico from January 1 to October 17, indicating that the 1946 epidemic outbreak that struck the island has been the most severe since 1942, when 117 cases were accounted for. Final official figures were released this week by the Bureau of Epidemiology of the Department of Health. In 1943 there were 31 cases registered, and again in 1944 there were 14 cases. Last year the official records show 10 cases. The great increase in cases of poliomyelitis occurred in three of the principal cities on the island, namely Ponce with 35 cases, San Juan with 30 and Rio Piedras with 28, but the coefficient is more alarming in the small towns of *Patillas* and *Gurabo*, in which 9 cases were registered for each town. Of 77 municipalities in Puerto Rico the epidemic struck 47, leaving thirty towns and cities where cases were not reported.

Public Health Units Under Construction.—The government of Puerto Rico is now constructing nine public health units with an appropriation of $630,000 voted by the insular legislature in February 1945. These units will consist of a hospital and public health unit and will take care of indigent or charity cases in Las Marias, Orocovis, Adjuntas, Aguas Buenas, Rio Grande, Villalba, Dorado, Rincon and Isabela. New equipment will have to be purchased by the municipal governments in these towns.

Expansion of School of Tropical Medicine.—Dr. Pablo Morales Otero, director of the School of Tropical Medicine, has submitted to the Planning Board a program for the construction of the hygiene department of this institution and a request of funds to be allocated by the insular legislature to enlarge the existing hospital facilities in order to double its capacity from 50 to 100 beds. Plans are also under way for the construction of another building to group all the administrative offices of the school that are now in different buildings in San Juan. It is estimated that the legislature will appropriate not less than

$400,000 during the month of February for this program. In addition to this, an act passed in 1945 allocated the sum of $240,000 for the new department of hygiene of this medical school, which will be a modern building to be added to the existing facilities of the institution. The services department building will cost $200,000 and the enlargement of the hospital an additional sum of at least $200,000, according to a statement by Dr. Morales Otero. The Civil Production Administration in Washington has approved all hospital construction facilities in Puerto Rico.

GENERAL

Examination in Surgery.—The American Board of Surgery, 225 South Fifteenth Street, Philadelphia 2, announces that its next examination in part I (written) will be held in March 1947, the exact day to be set later. All applications for this examination should be on file by December 1.

Seek Candidate for Fellowship.—The Schering Corporation of Bloomfield, N. J., has provided funds for the establishment of a fellowship in the department of pharmacology at the University of Tennessee in Memphis. Candidates are requested to submit their application and qualifications to John P. Quigley, Ph.D., at the University of Tennessee, Memphis, who will award the fellowship.

Prevention of Blindness.—The National Society for the Prevention of Blindness is holding its 1946 conference at the Hotel Pennsylvania, New York, November 25-27. Sessions will be devoted to the vision program in industry, developmental eye conditions in children, medical advances in restoring and conserving vision and meeting the need for professional personnel in sight conservation. There will be also a panel discussion on glaucoma.

British Visitors.—Dr. Jean Mackintosh, senior maternity and child welfare officer of Birmingham, England, arrived in New York on October 6 to visit maternal and child health services in New York City, Boston, Philadelphia, Baltimore, Toronto, Chicago and Minneapolis. Accompanying Dr. Mackintosh is Alderman Mrs. Nellie Hyde of the Birmingham City Council, who is concerned with the administration of maternal and child health services in the English cities.

Clair Turner Joins Infantile Paralysis Foundation.—Clair E. Turner, Dr.P.H., visiting professor of health education, University of California, and consultant to the Illinois Department of Public Health and the Kansas State Board of Health, has been appointed assistant to Mr. Basil O'Connor, president of the National Foundation for Infantile Paralysis. Dr. Turner will be engaged in strengthening relationships between the school systems and the various activities of the national foundation.

Muscle Charts Available.—Under the direction of a medical committee on the treatment and after-effects of poliomyelitis a muscle chart has been prepared. This chart is a standard type of record of muscle strengths especially desirable for use in the care of poliomyelitis patients and can be used advantageously by the physical therapy departments of hospitals and clinics. These charts are available free of charge and in quantity from the National Foundation for Infantile Paralysis, 120 Broadway, New York 5.

Society for Surgery of the Hand.—The American Society for Surgery of the Hand will meet in Chicago January 24-25 under the presidency of Dr. Sterling Bunnell, San Francisco. The society was formed in January 1946 as a direct outgrowth of the interest which developed in surgery of the hand during World War II. The original group consisted of thirty-five surgeons, all of whom are primarily interested in surgery of the hand or who have contributed to the development of this field of surgery. The organization is limited in membership, is invitational and has as its objective improvement and development of surgery of the hand. Dr. Sumner L. S. Koch, Chicago, is president-elect, Dr. Henry C. Marble, Boston, vice president, Dr. Joseph H. Boyes, Los Angeles, secretary-treasurer and Dr. Thomas W. Stevenson, Salt Lake City, historian.

Van Meter Prize.—The American Association for the Study of Goiter again offers the Van Meter Prize Award of $300 and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the association, which will be held in Atlanta, April 3-5, provided essays of sufficient merit are presented in competition. The competing essays may cover either clinical or research investigations, should not exceed three thousand words in length, must be presented in English, and a typewritten, double spaced copy sent to the corresponding secretary, Dr. Thomas C. Davison, 207 Doctors Building, Atlanta 3, not later than January 1. A place will be reserved on the program of the annual meeting for presentation of the prize award essay by the author if it is possible for him to attend. The essay will be published in the annual proceedings of the association. This will not prevent its further publication, however, in any journal selected by the author.

Distribution of Streptomycin.—Distribution of a limited amount of streptomycin for clinical experiments in the treatment of tuberculosis will be handled by the American Trudeau Society, medical section of the National Tuberculosis Association, it was announced October 14. In response to a request by the Civilian Production Administration and a group of pharmaceutical manufacturers, Dr. H. McLeod Riggins, New York, president of the National Tuberculosis Association, has appointed a special committee headed by Dr. Horton C. Hinshaw, Mayo Clinic, Rochester, Minn., to correlate the carefully planned clinical research studies to be carried out in hospitals and sanatoriums designated by the executive committee of the American Trudeau Society. The object of these studies will be to determine the possibilities and limitations of streptomycin in the treatment of tuberculosis and to learn if the drug is sufficiently effective to justify increased commercial production, Dr. Riggins explained. Pointing out the high cost and limited quantity of the drug, Dr. Riggins said it would be impossible at this time to supply many well qualified investigators or to assign it for individual cases, regardless of the degree of urgency. Dr. Hinshaw, who has conducted studies in streptomycin for the past twenty months, warned that it has not yet been sufficiently tested to warrant large scale production and use in the treatment of tuberculosis. He emphasized that the drug cannot be regarded as a substitute for present methods of sanatorium and surgical therapy.

CANADA

Meeting of Medical Students and Interns.—The tenth annual national conference of the Canadian Association of Medical Students and Internes will be held at the medical building of McGill University, Montreal, November 14-17. Nine Canadian medical schools will send two delegates each, and an unknown number of intern groups in Canadian hospitals will be represented. Highlights of the conference will be a complete constitutional revision, the consideration of an "affiliation" with the Canadian Medical Association, the adoption of a medical film plan in conjunction with the National Film Board, and a discussion of intern remuneration. This conference culminates a year of reorganization following the disruption brought about by the accelerated courses. During this year a six member executive committee has carried through an agreement with the Canadian Medical Association for an "affiliation" of Canadian Medical Association and the Canadian Association of Medical Students and Interns, if the latter's delegates so desired at the tenth conference. The Canadian Medical Association's decision was effected at its annual reunion at Banff in June.

Marriages

Harry James Keys, Brooklyn, to Mrs. Constancia Wellington Johnson of Jacksonville Beach, Fla., recently.

Robert Boyd Lindsay, Winston-Salem, N. C., to Miss Elizabeth Grey Peden of Canton in Asheville, July 6.

Ralph Bertram Williams Jr., Wilmington, N. C., to Miss Ellen Shannon of Springfield, Tenn., July 6.

John Jerome Coyle, Chandler, Okla., to Dr. Elizabeth Irby Tutwiler of Greensboro, Ala., August 14

George Turner Howard Jr., Knoxville, Tenn., to Miss Sue Scott Crizer at Appalachia, Va., July 20.

John William Ridenour to Miss Dorothy Louise Mazza, both of Washington, D. C., July 27.

Francis M. Haugh, Appleton, Wis., to Miss Lorraine Calhoun of Waukegan, Ill., July 31.

Thomas Harding Wolever Jr., Fulton, N. Y., to Miss Helen Romano of Syracuse recently.

James H. Kelleher, Montpelier, Vt., to Miss M. Eileen Duffy of New York, July 22.

Francis H. Stern, Philadelphia, to Miss Helen Gordon of Harrisburg, Pa., June 9.

Samuel T. Killian to Miss Renee Engel, both of Syracuse, N. Y., June 15.

Deaths

Leroy Upson Gardner ⊕ Saranac Lake, N. Y.; Yale University School of Medicine, New Haven, 1914; born in New Britain, Conn., Dec. 9, 1888; following a period of graduate study at the Boston City Hospital and the Harvard Medical School, Boston, joined the faculty at Harvard as an instructor in pathology, serving in 1916-1917; returned to Yale as assistant professor of pathology, 1917-1918; an Associate Fellow of the American Medical Association, in which he had been a charter member of the Council on Industrial Health; fellow of the American Association for the Advancement of Science; member of the American Association of Pathologists and Bacteriologists and the American Society for Experimental Pathology; member of the board of directors of the National Tuberculosis Association; member of the corresponding committee on silicosis, International Labor Office, in 1930; a first lieutenant in the medical corps of the U. S. Army in 1917; trustee, village of Saranac Lake, 1932-1933, member of the water board, 1929-1930 and member of the village planning commission; for many years visiting lecturer in medicine at the University of Rochester School of Medicine; consultant pathologist at the U. S. Veterans Bureau from 1926 to 1932; formerly pathologist and for many years director of the Trudeau Foundation; since 1927 director of the Saranac Laboratory for the Study of Tuberculosis; trustee, Trudeau Sanatorium; in 1935 was awarded the Trudeau Medal of the National Tuberculosis Association for his work on the pathology of tuberculosis, notably that dealing with the relation between tuberculosis and silicosis; in 1940, at the annual meeting of the American Association of Industrial Physicians and Surgeons, was presented with the annual William S. Knudsen award for outstanding achievement in industrial medicine because of advances in the knowledge of silicosis resulting from research directed by him; in 1940 delivered the seventh annual John W. Bell lecture; co-author of "Tuberculosis—Bacteriology, Pathology and Laboratory Diagnosis" with S. A. Petroff, 1927; received the honorary degree of master of science from Yale in 1940; died October 24, aged 57.

Robert K. Lambert ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1922; born in New York Nov. 5, 1898; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology and the Association for Research in Ophthalmology; fellow of the American College of Surgeons and the New York Academy of Medicine; clinical professor of ophthalmology at his alma mater; served during World War I and as a major in the medical corps, Army of the United States, during World War II; chief of the eye service at the Mount Sinai Hospital, where he served an internship and residency; served as attending surgeon, in charge of the ophthalmologic service of Montefiore Hospital for Chronic Diseases and later as consulting ophthalmic surgeon; died in the Doctors Hospital October 3, aged 47, of fibrosarcoma and pulmonary embolism.

James Trent Christison, St. Paul; Long Island College Hospital, Brooklyn, 1890; University of Minnesota College of Medicine and Surgery, Minneapolis, 1901; born in Southampton, England, Oct. 2, 1865; a member of the American Medical Association, serving as a member of its House of Delegates in 1918 and from 1934 to 1938; past president of the Minnesota State Medical Association and for many years a member of the editing and publishing committee; past president of the Ramsey County Medical Society; clinical professor emeritus of pediatrics at the University of Minnesota Medical School and formerly associate professor of pediatrics at the University of Minnesota Graduate School; served on the staffs of the Miller and Children's hospitals; died at Deer River, Minn., September 14, aged 81, of coronary occlusion.

Benjamin Harrison Swint ⊕ Charleston, W. Va.; College of Physicians and Surgeons, Baltimore, 1911; born in Pickens, W. Va., Aug. 14, 1888; fellow of the American College of Surgeons; member of the West Virginia Department of Health; past president of the Kanawha Medical Society; served overseas during World War I; at one time a member of the West Virginia National Guard; affiliated with St. Francis Hospital; in 1942 received from Pope Pius XII the award of "Knight of the Holy Sepulchre" for distinguished service to the church; the award of Silver Bear was presented to him by the National Council of Boy Scouts of America for "distinguished service to boyhood"; died September 7, aged 58, of acute pulmonary edema.

Torrence Calvin Moyer ⊕ Lincoln, Neb.; University of Nebraska College of Medicine, Omaha, 1914; specialist certified by the American Board of Internal Medicine; fellow of the American College of Chest Physicians and the American College of Physicians; member of the American Trudeau Society and the American Heart Association; served as president of the Lancaster County Tuberculosis Society; served during World War I; member of the staffs of the Bryan Memorial Hospital and the Lincoln General Hospital, where he died September 8, aged 58, of coronary heart disease.

Charles Edward Bradley, Colorado Springs, Colo.; University Medical College of Kansas City, 1895; died in St. Francis Hospital September 10, aged 81, of gastric hemorrhage.

James Murray Ellzey Jr., Philadelphia; Medical College of Virginia, Richmond, 1931; member of the American Medical Association; associate surgeon, Chestnut Hill Hospital; died September 8, aged 43, of coronary occlusion.

Hal S. Frazer, St. Louis; St. Louis College of Physicians and Surgeons, 1898; died in the Alexian Brothers Hospital September 8, aged 68, of coronary occlusion and carcinoma of the liver.

James Stewart Gaumer ⊕ Fairfield, Iowa; Rush Medical College, Chicago, 1900; fellow of the American College of Physicians; veteran of the Spanish-American War; on the staff of the Jefferson County Hospital; died September 10, aged 74, of coronary occlusion.

Philip Grover Hirtenstein, New York; University and Bellevue Hospital Medical College, New York, 1903; member of the American Medical Association; died August 9, aged 72, of heart disease.

Harris Ayres Houghton, Ridgewood, N. J.; Syracuse University College of Medicine, 1901; captain in the medical corps of the U. S. Army during World War I; formerly affiliated with the Flushing (N. Y.) Hospital, Manhattan Eye, Ear, Nose and Throat Hospital, Park East and Park West hospitals, all in New York, Physicians Hospital, Plattsburg and the Kingston (N. Y.) Hospital; died in the Veterans Administration Facility in Lyons, N. J., September 2, aged 72, of ruptured abdominal aortic aneurysm.

Egbert Railey Hull, Camden Point, Mo.; University Medical College of Kansas City, 1907; member of the American Medical Association; also a druggist; died in St. Joseph September 3, aged 81, of peritonitis.

Leo Jacoby, New York; Columbia University College of Physicians and Surgeons, New York, 1900; member of the American Medical Association; affiliated with the Harlem Hospital Clinic; died September 1, aged 69, of cerebral hemorrhage.

Jerome Augustine McSweeney, New York; Fordham University School of Medicine, New York, 1911; died in Bayshore Village, N. Y., June 22, aged 57, of pulmonary tuberculosis.

Daniel Flick Remer ⊕ Mount Holly, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1910; affiliated with the Burlington County Hospital; medical examiner for the Pennsylvania Railroad; died September 6, aged 66, of coronary occlusion.

David O. Roberts, Hanover, Ohio; Eclectic Medical Institute, Cincinnati, 1880; died September 10, aged 89, of congestive heart failure.

Tazwell David Rowland, Shawnee, Okla.; Memphis (Tenn.) Hospital Medical College, 1903; member of the American Medical Association; major, medical reserve corps, U. S. Army, not on active duty; on the staff of the Shawnee City Hospital; died September 3, aged 75, of uremia.

Edmund O. Sawyer, Los Angeles; Starling Medical College, Columbus, 1880; served as county health officer; died July 15, aged 94.

Joseph Scheurich, Philo, Ill.; Barnes Medical College, St. Louis, 1898; on the visiting staff of the Mercy Hospital and the Burnham City Hospital in Champaign, where he died September 7, aged 73, of coronary heart disease.

Gust Sjolander, Midland, Mich.; Saginaw Valley Medical College, Saginaw, 1903; Chicago College of Medicine and Surgery, 1912; member of the American Medical Association; died September 6, aged 74, of coronary occlusion.

Helen E. Weithaase, Vineland, N. J.; Woman's Medical College of Pennsylvania, Philadelphia, 1908; died August 6, aged 72, of carcinoma of the stomach and cerebral thrombosis.

Guillermo Wills, New York; University of Pennsylvania Department of Medicine, Philadelphia, 1908; died July 2, aged 64.

George T. Zerbe, Bon Aqua, Tenn. (licensed in Tennessee in 1910); died July 30, aged 80, of heart block.

William Simpson Zimmerman ⊕ Spartanburg, S. C.; Medical College of the State of South Carolina, Charleston, 1909; died July 18, aged 62.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 12, 1946.

The National Health Service Bill

Moving the second reading of the National Health Service bill in the House of Lords, the lord chancellor said that it represented the greatest task that ever had been placed on the shoulders of one man. The minister of health was in the position of commander-in-chief planning a campaign against a very dangerous enemy, the forces of disease and ill health. But he was prevented from becoming what might be termed "a pocket Hitler." Every regulation he made must be approved by Parliament. Our hospital service had been developed in a haphazard way. The distribution of hospital services was quite irregular: there was no system at all and overlapping occurred. Many hospitals were too small to justify independence. We could not rely any longer on charity for hospital expenses. The scheme did not involve bureaucratic control. The doctors would have full freedom and scope for their professional skill.

In the debate the bill was criticized by two leading physicians. Lord Moran, president of the Royal College of Physicians, said that with regard to the control of hospitals the medical profession would rather be under the minister than under the local authorities. The minister should put into the service a small number of experienced men who were leaders of the profession. The leisure for research which able men had hitherto enjoyed should be preserved. Committees, which were the drowsy syrup of the democratic state, ate up the spare time of specialists. There was disquiet among general practitioners as to their future. They feared that under a whole time service they would lose their liberty. He had no certain answer to the question whether a whole time service was necessarily bad for the profession and for the public.

Lord Horder said that the anxiety in the profession today lay in the realization of the tremendous centralization of power vested in the minister. He had spoken many times about his "consultation" with the profession, but that was a euphemism for the most blatant form of "ipse dixitism." He hoped that the government might be persuaded to accept amendments which might preserve the voluntary hospital system and safeguard the freedom of the individual, thus deferring indefinitely the nationalization of medicine. The bill condemned every one to a dead level of mediocrity. There was no escape except through the medium of a black market in doctors, and his mind boggled at the thought of its probable immensity. They could not be blamed for thinking of it sympathetically if they believed it was the only salvation for the patient. It was the doctors' duty to do their utmost to make this experiment succeed in the best interest of the public. But the overriding duty of the doctor was not to the state but to the patient. The bill was read a second time without a division.

Sir Walter Langdon-Brown

The death at the age of 76 of Sir Walter Langdon-Brown has removed a great teacher and brilliant writer. After a distinguished career at Cambridge he completed his medical education at St. Bartholomew's Hospital and was appointed to the staff. The application to medicine of the rapid advances in physiology made at the close of the nineteenth and in the present century dominated his teaching, and no one, either by the spoken or by the written word, did so much to reveal his importance to the profession. From the first he was deeply interested in modern endocrinology, whose birth in this country took place in 1891 on the discovery by G. R. Murray in that year of the internal secretion of the thyroid gland. Langdon-Brown was one of the first to draw attention to the similarity of the effects produced by lesions of the anterior pituitary and of the adrenal cortex some years before Cushing described pituitary basophilism. A master of the brilliant phrase, he called the pituitary gland "the leader of the endocrine orchestra," and later when the importance of the hypothalamus in relation to the pituitary became clearer he described the hypothalamus as "holding the still more important rank of conductor of that orchestra." The importance of his teaching on the applications of endocrinology was recognized by his election to the presidency of the recently constituted Section of Endocrinology of the Royal Society of Medicine, although his illness prevented him from ever occupying the chair and his presidential address had to be read for him. His subject was "The Development of Endocrinology" (The Journal, August 10, p. 1238) and his treatment of it did not show any lack of his old vigor.

He was a prolific writer. His most successful book, "Physiological Principles in Treatment," first published in 1908, went through eight editions. Other works included "The Sympathetic Nervous System in Disease" (1920) and "The Endocrines in General Medicine" (1927). He was joint editor of "The Practitioner's Encyclopedia of Medical Treatment." In these books and in lectures and articles contributed to the medical press he taught medicine as applied physiology in a most luminous manner, drawing examples widely from history and literature; for his vision was not limited to the materialism of medicine but included things of the mind. In short, his outlook was philosophical, as can be seen in the titles of some of his addresses: "Thus We Are Men," "The Pursuit of Shadows," "We Have Reason to Think," "Some Gods and Their Makers," "New Pains for Old." In his later years he was much interested in medical psychology and was attracted to the school of Adler. As president of the Medical Society of Individual Psychology he contributed to several of its publications.

PARIS

(From Our Regular Correspondent)

Oct. 12, 1946

New Antituberculosis Program

The former antituberculosis campaign caused the death rate to go down by 40 per cent and succeeded in preventing a notable increase of the morbidity through tuberculosis after the war, but France still has about 70,000 deaths due to this illness. The object of the new law of the 31st of October 1945 is to coordinate the working of the public and private institutions with specialized doctors and officials. The basis is the "département" (district) with its dispensaries provided with district nurses ("assistantes sociales") for the detection of unknown cases by means of systematic roentgen ray and skin testing in series. Dispensaries also practice artificial pneumothorax. An antituberculosis committee for local mutual aid and health education insures aid to the tuberculous and their families and organizes health propaganda. Each district hospital will be provided for with a "départemental" center of phthisiology with the corresponding beds. The head phthisiologist is assisted by a district nurse, who coordinates the activities of all the district nurses of the "département." The center, a group organized for diagnosis, treatment, sorting, and admission to hospitals, is also the liaison organization between dispensaries and the treatment establishments. The latter are (1) "aeriums," prophylaxis centers for exposed or predisposed children; (2) preventoriums for patients with a recent primary infection or suffering from nodular erythema or from serofibrinous pleurisy (all these patients must be free from fever and their sputums must be negative); (3) sanatoriums for treatment of curable patients; (4) sanatoriums for after-treatment and readaptation. In every sanitary district (there are fifteen for the whole country) a regional consulting doctor coordinates the antituberculosis struggle in the region. In Paris a central hospitalizing office, organized by the National Committee Against Tuberculosis, keeps an up to date complete documentation and advises the "départemental" centers of the available beds. As every tuberculous person declared as such is immediately sent to a sanatorium (without waiting for the decision regarding the responsibility of the costs), it is expected to diminish the danger of contagion. Then a corps of phthisiologists selected through a competitive examination has been formed. An important part is to be played by the law on the insurance against long diseases, which at first covers two years and may be extended to five years. This law provides the insured and their families with the covering of their expenses incurred through illness. During the time of his stay in a hospital or in a sanatorium, the insured is entitled to an allocation of half his salary or of two thirds if he has dependants. During the eventual period of readaptation and professional reclassifying (which is now realizable thanks to financial arrangements and which is even declared as compulsory) the insured will have the benefit of the payment of the medical and pharmaceutical expenses and a complement of wage allocation. After being reclassified and having resumed work, he will always benefit by the paying of his medical and pharmaceutical expenses. The law covering the new organization of the campaign against tuberculosis provides similar protection for patients not belonging to the social insurance. By means of those dispositions, which have been in force since the 1st of January 1946 and through other organizations, if is expected that morbidity and mortality from tuberculosis will be diminished.

Miscellaneous

On the invitation of an American relief organization for France, the minister for population has gone to America; he will visit New York, Washington, San Francisco, Los Angeles, Chicago, Quebec, Toronto, Ottawa and Montreal and will return via Boston and New York.

On the invitation of the Iranian government, Professor Pasteur-Valery-Radot, Dr. Legroux and Professor Lacassagne have gone to Teheran to reorganize the Iranian Pasteur Institute. Dr. Balthazar has been appointed director, and the scientific council is composed of Messrs. Trefouel, Pasteur-Valery-Radot, Lacassagne, Legroux and Georges Blanc.

COPENHAGEN

(From a Special Correspondent)

Oct. 5, 1946.

Medical Practice in the Melting Pot

Last June Dr. C. Clemmesen, chairman of the Danish Medical Association, presided over a special meeting at which between 400 and 500 doctors took part in a discussion of the future of medicine in Denmark. Among those present were Dr. J. Frandsen, chief of the Danish Public Health Service, and Mr. L. P. Borberg representing the medical insurance societies. It will be recalled that some 85 per cent of the inhabitants of Denmark receive their medical care through the agency of insurance societies which started as private undertakings and which now, owing to state subsidies, have become more or less public bodies. By defending their own interests at the expense of the doctors, these societies have incurred an unpopularity in certain medical quarters amounting to definite antagonism. The special meeting enabled many doctors to ventilate their grievances, gave Dr. Frandsen an opportunity to defend his plans for converting medical practitioners into apostles of preventive medicine and enabled Mr. Borberg to take up the cudgels on behalf of the much abused insurance societies.

THE CASE AGAINST THE SICKNESS INSURANCE SOCIETIES

From the outset these societies have been haunted by the phantom of bankruptcy with the result that they have striven to keep expenses down at the cost of both patient and doctor. Doctors are remunerated according to two different systems, the first depending on an annual capitation fee of, at any rate in one district, 18 kroner, for which he treats not only the insured person but also his wife and children. According to the second system he is paid a small sum for each consultation and visit. How small the sum is has been calculated by a doctor who kept careful records of all his cases and has found that the 17,000 kroner paid him by the insurance society would have been 29,000 kroner had his insured patients been private patients. According to another calculation, only one third of the total cost of medical aid is borne by the insurance societies, the remaining two thirds coming out of the pockets of the state and local authorities. The insurance societies are also accused of exploiting the public hospitals, in which their members are treated mainly at the cost of the community.

FREE SICKNESS BENEFITS

Every Dane, whatever his income, may be admitted to a public hospital, which, if it is situated outside the city of Copenhagen, will charge him only 4 to 7 kroner a day and which, if it is in Copenhagen, will charge him the ridiculously small sum of 1.20 kroner, although the actual cost to the hospital will be between 15 and 20 kroner a day. The insurance societies bear only a small fraction of the cost of hospital treatment of their members, who, if they are treated according to the first scheme by a doctor for an annual capitation fee, cease to trouble him as soon as he has sent them to a hospital; hence the tendency on the part of the insurance societies and some doctors to overload the hospitals with their patients. There are many other ways in which medical aid can be obtained free of charge. Any one who likes to do so can call in a public health nurse free of charge and obtain advice at a public welfare maternity institution. Any one under the age of 18 can be vaccinated against diphtheria, any one can get advice at a tuberculosis station, and any woman who wants to can obtain the advice of a doctor and midwife free of charge throughout her pregnancy. Not only the fever hospitals are open to all free of charge, but the subjects of venereal disease can obtain free treatment if they so desire.

CURATIVE OR PREVENTIVE MEDICINE

Dr. Frandsen, in his capacity of senior medical officer to the Danish Public Health Service, has had much to do with the inspiration and drafting of recent public health legislation in Denmark. He is also a believer in the general medical practitioner as the hub about which all preventive as well as curative medicine should revolve. Hence his efforts to make the general medical practitioner think in terms of health rather than disease. According to a new law enacted last summer, every child in Denmark up to the age of 7 is entitled to nine medical examinations free of charge, the first three examinations being allotted to the first year of life, and one examination for every one of the following six years. This task might well have been allotted to specialists in children's diseases, and a new special service might have been organized for this purpose without reference to the general practitioner. But Dr. Frandsen held that such sidetracking of the general practitioner would be unfortunate. Hence his inclusion in the working of the new scheme. But the reaction of the more conservative element in the ranks of the general medical practitioners was exemplified by one of them, who said in public "It is quite terrible with these children from 0 to 7 years. Are we to have them also? How on earth are we to cope with it all?" It is, however, probable that this attitude is exceptional and that most general practitioners, the younger ones in particular, are willing to shoulder new responsibilities reflecting a more liberal conception of the duties of a doctor. It is not altogether irrelevant to the matter that the Danish government is providing several million kroner for the new duties it is asking the medical profession to undertake.

Correspondence

COOPERATIVE HEALTH FEDERATION

To the Editor:—The board of directors of the newly organized Cooperative Health Federation of America, whose inauguration was featured by an editorial in THE JOURNAL, August 31, wish to set before your readers a statement of the principles and aims of the federation. We trust that you will publish this letter in full, because we feel that your editorial did not accurately report our position.

The first principle on which our federation is based is that patients have the right voluntarily to organize for the purpose of securing medical attention for themselves and their families.

Free association for any purpose not inconsistent with the public interest lies at the root of our liberties. Does the American Medical Association hold that the organization of consumers to obtain physicians' services is "inconsistent with the public interest"? We cannot believe that it does. Yet we find its constituent societies in a number of states sponsoring and supporting legislation that prohibits patients from organizing plans for medical care without the express permission of the doctors. In many states in which such laws have been enacted, medical societies have set up prepayment plans; since the societies have the power to prevent the formation of other plans, their plans are clearly monopolies. A major aim of the federation is to rectify the fundamental injustice of these laws. We have no wish to debar the doctors' plans; we wish merely to give consumers equal opportunity and thus restore in every state the liberty anciently permitted under the common law.

The second principle of our federation is that consumer organized medical care plans are an instrument for bringing the art and science of medicine more effectively to more people.

When consumers organize to provide themselves with services or goods they do so to obtain more and better services and goods. In the case of medical care, the consumer's interest must first be in quality. The members of this federation understand that comprehensive medical services of high quality require well trained physicians and competent auxiliary personnel adequate facilities and equipment, and the development of a personal relationship between a patient and his doctor. To achieve these conditions requires rational organization of the doctors and allied professional personnel. It further demands close cooperation and thorough organization between those who render and those who receive the services. Group practice, developed by physicians from the needs of their science, is, in our view, the answer for professional collaboration. It has, in fact, been successfully utilized by the majority of our members. In combination with prepayment and consumer organization, group practice has demonstrated its ability to deliver a high quality of care. There is no such thing as consumer control of medical practice. In plans sponsored by consumers, doctors are free agents, free to accept or reject the proffered compensation, free to render the kind of medical service their knowledge dictates and the profession's code of ethics demands.

In support of our statement that consumer organized plans wish to improve the effectiveness of medical care, we point to our member plans in comparison with the inadequacy of medical society sponsored plans. Only a fraction of the medical society plans have advanced beyond a minimum coverage of surgical operations. Their contracts are laden with restrictions and exclusions. The consumer sponsored groups, in contrast, all show broader scopes of service and most of them place particular emphasis on personal preventive medicine.

Our member plans provide for medical service in contradistinction to cash indemnities. They seek to develop medical centers rather than sell insurance policies. Their intent is to broaden the scope and enhance the quality of medical care at the same time as they give financial protection.

For these reasons the federation stands without equivocation for consumer organized medical care plans. It does not seek any exclusive rights for consumers but believes that the right of free association and competition will bring about progressive improvement in the distribution and quality of medical care.

Our third principle is that the public has a responsibility for assuring the availability of health and medical services for all the people without economic or other barriers.

From our work in organizing and conducting local prepayment plans we are acutely aware that there are all too many American people who cannot pay for an adequate standard of modern medical care. To provide them with such care as a matter of charity is, we conceive, consistent neither with good medicine nor with fundamental social justice. We therefore support the view that public funds should be used to provide for medical care in such a way that every one may receive equal service on an equal basis.

Because medical care is essentially a personal service and by its very nature requires an understanding of the community as well as of the individual patient, we stand for decentralization of any program of public health or health insurance. The disparity of means between states makes participation by the national government imperative, but we believe that a maximum of local administration and control are essential.

In conformity with our first two principles, we also stand for freedom for every person in the selection of his or her sources of medical care, for consumer representatives on boards and committees, and for the continued encouragement of voluntary associations of consumers. Application of these principles, we believe, effectively protects the American people against mechanical and impersonal medical services.

The Cooperative Health Federation of America believes that medical service is as proper an object for organization by patients as by doctors. We do not claim perfection for our plans, nor do we think that change in the method of paying for medical care will automatically and of itself alone immediately usher in the millennium. We have had wide practical experience in the organization of health plans and do not look for miracles. But we are intent on improving the distribution of the medical arts and sciences, and we believe that we have found one valid answer to the problem in voluntary consumer organization.

COOPERATIVE HEALTH FEDERATION OF AMERICA.
GEORGE W. JACOBSON, Secretary-Treasurer, St. Paul.

Medical Motion Pictures

FILM REVIEW

Studies in Human Fertility. Black and white, sound, 1,500 feet, showing time forty-two minutes. Produced in 1940. Professional Advisers H. L Daiell, M.D , and Eric M. Matsner, M.D. Procurable from Ortho Pharmaceutical Corporation, Linden, N. J.

This motion picture presents in an authoritative, interesting and dignified manner a summary of the basis and application of methods for the control of conception. The physiology of reproduction is first presented by means of a lecture illustrated by photomicrographs and animated drawings. The medical indications for the control of conception are outlined briefly, and the various technics of contraception are discussed and illustrated. The undesirable and dangerous methods are contrasted with the accepted technics, and this is followed by a short discussion of the pharmacology of contraceptive jellies and creams. One suggestion relates to the part dealing with the temperature at which semen should be studied. Preservation is one thing and observation is another. The film leaves unanswered the question whether the refrigerated spermatozoa regain their motility if warmed to room or to body temperature. The sequence of the material is logical. The photography and general treatment are excellent. The entire presentation is well integrated and is suitable for the instruction of medical students, practicing physicians and nurses.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Dental Practice Acts: Validity of Restrictions on Advertising.—The plaintiff, a practicing dentist in the District of Columbia, filed suit for a declaratory judgment to determine his right to persist in certain practices contrary to regulations promulgated by the Board of Dental Examiners. From an adverse judgment, plaintiff appealed to the United States Court of Appeals for the District of Columbia.

The dental practice act of the District provides for the creation of a Board of Dental Examiners and authorizes it to revoke or suspend the license of any dentist found to be guilty of unprofessional conduct, which among other things is declared to be: "Advertising by any medium other than . . . a modest professional card or the display of a modest window or street sign at the licensee's office, which professional card or window or street sign shall display only the name, address, profession, office hours, telephone connections and, if his practice is so limited, his *specialty*: . . ." The board was then granted authority to make such rules and regulations as it deemed necessary to effectuate the purposes of the act, *and specifically to designate the size of cards and signs.* Accordingly, the board declared that a licensee be permitted to display only two modest signs, with information thereon *confined to that allowed by the act. Window signs and signs* flush with a building may not exceed 288 square inches in area with lettering limited to 3 inches in height. Signs which *protrude from a building may not exceed 144 square inches* in area, with lettering similarly limited to 3 inches in height.

The plaintiff, said the court, has not been accustomed to advertising in an unobtrusive manner. He estimates that more than one half of his fifty to sixty patients a day are attracted by his newspaper advertisements and building signs. He has spent from $2,500 to $6,000 a year in newspaper advertising. He has placed four signs flush with his office building, 4 by 6 feet in size, on which there is lettering 4, 5 and 8 inches in height; and a large metal sign hung at an angle. Thus there are at least twice the number of signs permitted by the regulations and each of the signs flush with the building is twelve times the *maximum size allowed. The plaintiff also displays* laboratory dental work in a small show case at the entrance of his office building.

The plaintiff first urges that he is deprived of the due process of law assured him by the fifth amendment in so far as the act forbids the advertising of prices, the advertising *of free dental examinations, the display of teeth or bridgework,* and truthful advertising in general. The Court of Appeals said that other courts have so often sustained identical legislative provisions that it is somewhat surprising that the appellant apparently seriously represents an argument in this case. The terms of the act, said the court, are clear. The words "large," "*professional services*," "*indirectly*" and "advertising" have all been considered sufficiently definite and precise as used in such legislation. The limitation on newspaper advertising *is a reasonable regulation under the terms of the act.*

The plaintiff next urges that the board has no authority to designate the number of signs that he may employ, there *being no limitation in the act as to number but only as to size.* The board insists that "size" as used in the act means "aggregate size" else the congressional provision is ineffectual. We agree, said the court, that the *regulation dealing with size is* a nullity if it permits the licensee to accomplish through multiplicious production the effect denied to a single display.

The plaintiff's *final attack is against the regulation of the board* which limits the size of the advertising signs to 144 and 288 square inches, with maximum lettering of 3 inches in height. *He complains that the regulation makes no distinctions* on the basis of the size or locality of the building, the floor on which the office is located or the nature of the obstructions to the view thereof; and that the *limitation is arbitrary*, with no elasticity or discretion provided. The regulations of *the board, said the court,* are valid so long as they are not unreasonable or arbitrary. If any doubt exists as to their invalidity, they must be upheld. The precise question is whether the limitation of a dentist's office signs to 144 and 288 square inches, with maximum lettering of 3 inches in height, is clearly an unreasonable restriction under the terms of the act. Bearing in mind that the purpose of the dental practice act is to maintain high professional standards and to eliminate "bait advertising" as a means of competition, we cannot but deem the dimensional delimitations on dental displays to be reasonable, the court concluded. The law demands simplicity and reserve; the regulations of the board merely insure that these will be maintained. The board, a body of competent practicing dentists, acting under congressional authority, has determined the rules for advertising within its profession. The district court has held the regulations promulgated under that authority to be reasonable and valid. We see no sound basis on which these determinations may be disturbed. Accordingly the judgment for the defendant was affirmed.—*Johnston v. Board of Dental Examiners, D. C., 134 F. (2d) 9 (1943).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Board in Specialties were published in THE JOURNAL, October 26, page 474.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: *Examination.* Montgomery, Jan. 21-23. Secretary, State Board of Medical Examiners, B. F. Austin, M.D., 519 Dexter Ave., Montgomery.

ARKANSAS:* Little Rock, Nov. 7-8. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, Nov. 7. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

CONNECTICUT:* *Examination.* Hartford, Nov. 12-13. Sec., Dr. Creighton Barker, 258 Church St., New Haven. *Homeopathic.* Derby, Nov. 12-13. Sec., Dr. J. H. Evans, 1488 Chapel St., New Haven.

DELAWARE: *Examination.* Dover, Jan. 14-16. *Endorsement.* Dover, Jan. 21. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

FLORIDA:* *Examination.* Jacksonville, Nov. 26-27. Sec., Dr. Harold D. Van Schaick, 2736 S.W. 7th Ave., Miami 36.

HAWAII: *Examination.* Honolulu, Jan. 13-16. Secretary, Board of Medical Examiners, Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu.

IDAHO. *Examination.* Boise, Jan. 14. Director, Board of Medical Examiners, Mrs. Agnes Barnhart, Room 355, State House, Boise.

INDIANA: *Examination.* Indianapolis, June. Exec. Secretary, Board of Medical Registration and Examination, Miss Ruth V. Kirk, 627 K. of P. Bldg., Indianapolis.

KANSAS: Kansas City, Dec. 4-5. Secretary, Board of Medical Registration and Examination, J. F. Hassig, M.D., 905 North 7th Street, Kansas City.

KENTUCKY: *Examination.* Louisville, Dec. 16-18. Sec., State Board of Health, Dr. P. E. Blackerby, 620 S. Third St., Louisville 2.

MAINE: Portland, Nov. 12-13. Sec., Board of Registration of Medicine, Dr. A. P. Leighton, 192 State St., Portland.

MARYLAND: *Examination.* Baltimore, Dec. 10-13. Sec., Dr. E. H. Kloman, 1215 Cathedral St., Baltimore 1. *Homeopathic.* Baltimore, Dec. 10-11. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

[illegible] *ion.* Boston, Nov. 19-22. Sec., Board of Regis- [illegible] Q. Gallupe, 413-F State House, Boston 33. [illegible] Jackson, Dec. Asst. Sec., State Board of [illegible] Jackson 113. [illegible] Omaha, June 1947. Director, Bureau of [illegible] scar F. Humble, State Capitol Building, Lincoln. [illegible] Carson City, Nov. 4. Secretary, Board of [illegible] *G. H. Ross, 215 N. Carson St., Carson City.* [illegible] *xamination.* Winston-Salem, Dec. 16-19 postponed. *Endorsement.* Raleigh, Jan. 16. Act. Sec., Mrs. L. McNeill, 226 Hillsboro St., Raleigh.

NORTH DAKOTA: Grand Forks, Jan. 7-10. Secretary, Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Examination.* Columbus, Dec. 3-5. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

SOUTH CAROLINA: Columbia, Nov. 11-12. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

SOUTH DAKOTA:* *Examination and Reciprocity.* Vermillion, Jan. 21-22. Secretary, Board of Medical Examiners, Dr. Gilbert Cottam, State Capitol Building, Pierre.

VERMONT: *Examination.* Burlington, Jan. 31-Feb. 1. Secretary, Board of Medical Registration, Dr. F. J. Lawliss, Richford.

VIRGINIA: Richmond, Dec. 3-6. Secretary, Board of Medical Examiners, Dr. J. W. Preston, 30½ Franklin Rd., Roanoke.

WASHINGTON: *Examination.* Seattle, Jan., 1947. Secretary, Mr. Nelson Vaughn, Olympia.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: Dec. 10. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

NEW MEXICO: *Examination.* Nov. 3. Sec., Miss Marion M. Rhea, State Capitol, Santa Fe.

RHODE ISLAND: *Examination. Providence, Nov. 13. Chief, Mr. Thomas* B. Casey, 366 State Office Bldg., Providence.

SOUTH DAKOTA: Sioux Falls, Dec. 6-7. Sec., Dr. G. M. Evans, Yankton.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days Three journals may be borrowed at a time Periodicals are available from 1936 to date Requests for issues of earlier date cannot be filled Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested) Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order Reprints as a rule are the property of authors and can be obtained for permanent possession only from them

Titles marked with an asterisk (*) are abstracted below

American Journal of Physiology, Baltimore

146:491-636 (July) 1946

Glucose Ingestion During Severe Anoxia. L. Van Middlesworth.—p 491.
Relation of Action Potentials to Mechanical Activity in Intestinal Muscle. E Bozler.—p 496
Hypersensitivity to Insulin in Eviscerated Hypophysectomized Rats L L Bennett and Louis M. Roberts.—p 502.
Exchanges of Heat and Tolerances to Cold in Men Exposed to Outdoor Weather. E F. Adolph and G W. Molnar —p 507.
*Tolerance of Man to Cold as Affected by Dietary Modifications High versus Low Intake of Certain Water Soluble Vitamins Nathaniel Glickman, R W Keeton, H H Mitchell and M K Fahnestock —p 538
Water Intoxication and Electroencephalogram E Gellhorn and H M. Ballin —p 559
Effect of Epinephrine and Physostigmine on Response of Striated Muscle to Acetylcholine and Potassium. Clara Torda and H. G Wolff —p. 567.
Characteristics of Peripheral Visual Performance. F. N. Low —p 573
Bone Growth in Rat as Related to Age and Body Weight. T F. Zucker and Lois M. Zucker —p 585
Specific and Nonspecific Nutritional Effects as Illustrated in Bone Lois M. Zucker and T. F. Zucker —p 593
Relationship Between Total Heat Exchange and Blood Flow in Hand at Various Ambient Temperatures R E. Forster, B G. Ferris Jr. and R Day —p 600.
Gastric Emptying and Intestinal Absorption of Dextrose Solutions E F. Birchall, P. F. Fenton and H. B. Pierce.—p 610
The Effect of Pulmonary Ventilation on Anoxemia. C. S. Houston —p 613
Development of Peripheral Visual Acuity During Process of Dark Adaptation F N Low. —p 622
Effect of Afferent Impulses on Hypothalamic Potentials E Gellhorn and H. M. Ballin —p. 630

Diet and Man's Tolerance to Cold.—Glickman and his associates carried out experiments on 12 healthy young men over a period of one hundred and fifty days to determine the effect of supplements of the water soluble vitamins to a diet containing only borderline concentrations of these vitamins on their ability to withstand repeated exposures of eight hours' duration either to intense cold (—20 F.) with considerable protective clothing or to a cool environment (60 F.) with little protective clothing. The tolerance to cold was measured by changes in rectal and mean skin temperature and in the performance of a series of psychomotor, perceptual and intellective tests The basal diet consumed by all subjects was adequate according to current standards in all essential nutrients except ascorbic acid, thiamine, riboflavin and nicotinic acid The amounts of these vitamins were generally two thirds or less of the recommended allowances of the Food and Nutrition Board of the National Research Council. The supplementary vitamins were given by capsule. When not receiving supplementary vitamins, the subjects received placebos indistinguishable from the vitamin capsules. The results of this experiment indicate that the ability to withstand the damaging effects of repeated exposures to cooling environments and to maintain normal neuromuscular and mental efficiency cannot be appreciably enhanced by giving excessive doses of ascorbic acid, thiamine, riboflavin and nicotinic acid above the amounts required for adequate nutrition. They suggest that the requirements of some of these vitamins are considerably less than the recommended allowances of the Food and Nutrition Board of the National Research Council.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

56:1-140 (July) 1946

Roentgen Diagnosis of Double Aortic Arch and Other Anomalies of Great Vessels E. B D. Neuhauser —p 1.
Anomalous Right Subclavian Artery Originating on Left as Last Branch of Aortic Arch: Report of Probable Case Diagnosed Roentgenologically. H M Staufer and H H Pote —p 13
Saccular Aneurysm of Abdominal Aorta Report of Case of Eight Years' Duration J G Archer, G J Marum and E. T White —p 15
Hepatodiaphragmatic Interposition of Colon with Gastric Hypertrophy: Case E Starr —p 22
*Myelography in Patients with Ruptured Cervical Intervertebral Disk F Murphey, L M Pascucci, W. H Meade and B. R Van Zwalenburg —p 27
*Phantom Nucleus Pulposus J Gershon Cohen —p 43
Roentgenographic Preparations from Gross Anatomic Sections H O Mahoney, B J Anson and R. F. Dent —p 49.
Aberrant Pancrea A J Present.—p 55
Pancreas and Its Relation to Psoriasis, Eczema and Certain Other Diseases of Skin W. A Quimby —p 58
Tumor Dosage and Results in Roentgen Therapy of Cancer of Breast M Lenz —p 67
Primary Malignant Bone Tumors Review of Cases Seen in Radiation Therapy Department of Bellevue Hospital. R. Ro h and L. Ra er —p 75
Recovery from Radiation Mutations of Genes W S[illegible] —p 8[illegible]

Myelography in Ruptured Cervical Intervertebral Disks.—Rupture of the cervical intervertebral disks producing pain in the neck, shoulder and arm has been found by Murphey and his associates to be a fairly common lesion. They present their experience with myelography in patients having or suspected of having this condition They consider pantopaque (ethyl iodophenylundecylate) to be the opaque medium of choice At body temperature it is one seventeenth as viscid as the iodized poppyseed oils. For this reason it is more easily injected and removed, is less prone to globulation and assumes more accurately the shape of the subarachnoid space. Any portion of it which cannot be aspirated will be absorbed The authors review observations made in the course of 62 cervical myelograms, of which 28 were positive, with 16 verified at operation. They stress that in many cases the diagnosis can be made solely on the basis of clinical findings. Plain lateral and oblique roentgenograms of the cervical spine often provide helpful confirmatory information. Positive cervical myelographic findings have proved highly accurate in this small series of surgical cases The significance of negative cervical myelographic findings has not yet been completely determined, although the evidence in this series suggests that a negative picture in the cervical region is of much more value than is a negative one in the lumbar region

Phantom Nucleus Pulposus.—Phantom nucleus pulposus results in the roentgenographic appearance of an empty space or vacuum in that portion of the intervertebral disk normally occupied by this structure. Gershon-Cohen describes this phenomenon in 3 cases of traumatic spondylitis in the lower lumbar spine and in the lumbosacral articulation. All 3 patients had a history of a severe injury causing intense low backache incapacitating the patient for several weeks In no instance was there evidence of fracture or dislocation of the vertebrae. Recurrent intermittent backaches were experienced by 2 patients, while the third apparently never was troubled again after the initial injury Except for the unusual roentgenologic aspects none of the examinations revealed anything abnormal except slight limited motion of the lumbosacral spine in 2 of the 3 patients There was no neurologic evidence of herniation, yet the history of injury and the localization of the spondylitis to the area of injury leads one to the inference that trauma had some connection with the pathologic process The severe subchondral osteosclerosis which was present in each case points strongly to injury and inflammatory reaction in and around the cartilage plates. It is conceivable that loss of nuclear substance took place through defects in these cartilage plates, but no evidence of herniation was visible in the vertebral bodies, and no patient had symptoms of posterior protrusion of the nucleus pulposus The author recommends the study of the vacuum phenomena of healthy and diseased joints as an addition to the intraspinal contrast mediums

Anesthesiology, New York

7:355-476 (July) 1946

*Analysis of 500 Obstetric Cases with Continuous Caudal Anesthesia Using Pontocaine. H. O. Brown, J. M. Thomson and J. E. Fitzgerald.—p. 355.
Clinical Study of Carbon Dioxide Absorption During Anesthesia. L. H. Mousel, W. A. Weiss and L. A. Gilliom.—p. 375.
Alveolar and Arterial Oxygen Contents During Oropharyngeal Oxygen Therapy. E. M. Christensen, Audrey G. Urry and S. C. Cullen. —p. 399.
Observations on Carbohydrate Metabolism During Prolonged Pentothal Anesthesia in Dogs: I. Blood Sugar and Liver Glycogen. W. M. Booker.—p. 405.
Edema of Larynx, Rare Complication of Endotracheal Anesthesia: Case. W. M. Shaw.—p. 416.
Unusual Incidents Following Spinal Anesthesia: Report of 2 Cases. F. A. Smith.—p. 419.
*Acute Aseptic Meningitis Following Paravertebral Lumbar Sympathetic Blocks. M. H. Adelman and C. I. Irwin.—p. 422.
Nitrous Oxide-Cyclopropane-Curare Anesthesia: Review of 200 Cases. D. A. Holaday.—p. 426.

Caudal Anesthesia in Obstetrics.—Brown and his associates present an analysis of the first 500 cases of continuous caudal anesthesia performed at Cook County Hospital in which tetracaine hydrochloride (pontocaine hydrochloride) was employed in various concentrations both with and without a vasoconstrictor. All of the 500 cases were vaginal deliveries. Because of limitations of time and personnel, the continuous caudal method was employed in less than one tenth of all obstetric cases that were admitted during the eighteen months. A study of the pathogenesis indicates that tetracaine-epinephrine isotonic saline solution is safe and useful for caudal anesthesia, when it is administered and controlled by competent personnel. The use of a vasoconstrictor is advocated in concentrations of 1 : 200,000 epinephrine or equivalent. One to five hours' relief is obtained from each dose, reducing the frequency of injections and minimizing the likelihood of systemic effects resulting from absorption. Caudal anesthesia gives complete relief to the mother and does not cause narcotization of the baby. The rate of cervical dilatation was not significantly altered. The anesthesia and analgesia were satisfactory in 428 cases. Of the remaining 72, 13 were definite failures resulting from inability to insert the needle into the caudal canal. In 28 cases the analgesia was incomplete because of insufficient time or inadequate dosage, but in one third of these the deficiency was remedied by technical adjustments. In 16 there were technical interruptions; obstetric conditions had caused the interruptions in 9 cases.

Aseptic Meningitis Following Sympathetic Blocks.—Adelman and Irwin report 2 cases presenting a clinical picture of acute meningitis developing within six to nine hours after paravertebral sympathetic nerve blocks. The clinical course was benign and of seventy-two hours' duration; no untoward sequelae developed. Studies of the cerebrospinal fluid failed to reveal responsible bacteria. The clinical picture, the repeatedly negative bacteriologic studies and the normal cerebrospinal sugar titers pointed to a noninfectious causative agent. The authors are convinced that the meningitis was neither of bacterial nor of virus origin but was related to the lumbar sympathetic nerve blocks. The subarachnoid space was entered during the procedure and a chemical irritant was introduced intrathecally. The immediate cause of the meningitis must be found either in the equipment or in the anesthetic solution. Since contamination of lumbar equipment could be ruled out, it appears that the anesthetic solution was the immediate cause of meningitis. The absence of signs of subarachnoid block indicates that little procaine was injected intrathecally. Thus it appears unlikely that procaine was the responsible agent. The authors think that pyrogen-containing distilled water produced a chemical irritation of the meninges and acute aseptic meningitis. These cases emphasize that paravertebral sympathetic nerve blocks are not without hazard. The anesthesiologist must exert the utmost care in performing such nerve blocks. Anesthetic solutions should be prepared with pyrogen-free distilled water or isotonic solution of sodium chloride, preferably the latter.

Archives of Dermatology and Syphilology, Chicago

54:1-118 (July) 1946

*Latent Syphilis: Study of 169 Cases Observed Ten Years or More. J. W. Jordon and F. A. Dolce.—p. 1.
Penicillin in Dermatology: Study of 174 Cases. O. Canizares.—p. 19.
Preservation of Virulence of Treponema Pallidum: Some Additional Laboratory Methods. E. K. Stratton.—p. 25.
Temporary Unilateral Loss of Vision Associated with Ioderma. E. A. Hand.—p. 29.
Psychosomatic Aspects of Lupus Erythematosus. J. E. Pisetsky.—p. 33.
Delusion of Parasitosis (Acarophobia). J. W. Wilson and H. E. Miller. —p. 39.
Erysipeloid: Successful Treatment with Penicillin: Case. L. Nicholas. —p. 57.

Latent Syphilis.—Jordon and Dolce present data obtained on 169 patients with latent syphilis observed ten years or more, 100 of whom were considered well treated and 69 poorly treated. The term "latent syphilis" as employed in this study means that there were no clinical signs and symptoms of syphilis at the time of the examination. Diagnosis was usually made because of repeatedly positive serologic reactions or the birth of a congenitally syphilitic child. The authors found that there is a decided tendency for the blood serum of persons with untreated or poorly treated latent syphilis to fluctuate over a period of years. The serologic reactions of approximately 25 per cent of untreated or poorly treated persons with latent syphilis become negative spontaneously and remain so over a period of years. In 20 to 25 per cent of untreated or poorly treated persons with latent syphilis some cardiovascular complication will develop when observations are made over a period in excess of thirteen years. There is a definite relationship between the state of the serum and the ultimate clinical outcome. Persistence of strongly positive serum predicts a poor clinical outcome, whereas a tendency to fluctuate indicates a relatively good clinical outcome. There is a decided tendency for the blood serums of persons with well treated latent syphilis to fluctuate over a period of years. Adequate antisyphilitic treatment of persons with latent syphilis results in only a 17 per cent increase in long term serologic reversals over those that occur spontaneously. Adequate antisyphilitic treatment reduces the hazard of late serious complications to a minimum. There is no relationship between the state of the blood serum in persons with well treated latent syphilis and the development of late complications. Arsenical drugs are more efficacious in preventing late complications than heavy metals. Twenty to twenty-nine injections of an arsenical is adequate therapy. This should be combined with alternating courses of a heavy metal. More than this amount does not result in reduction of complications. Forty to sixty injections, and possibly less, of a heavy metal are adequate. This should be combined with adequate arsenical therapy.

Archives of Ophthalmology, Chicago

36:1-134 (July) 1946

*Use of Diisopropyl Fluorophosphate ("DFP") in Treatment of Glaucoma. I. H. Leopold and J. H. Comroe Jr.—p. 1.
Effect of Diisopropyl Fluorophosphate ("DFP") on Normal Eye. I. H. Leopold and J. H. Comroe Jr.—p. 17.
Visual Disturbances Associated with Head Injuries. J. N. Greear Jr. and J. S. McGavic.—p. 33.
Plastic Repair of Deformities of Socket and Minor Defects About Orbit. K. M. Marcks and G. S. Zugsmith.—p. 55.
Influence of Local Antiseptics on Regeneration of Corneal Epithelium of Rabbits. J. G. Bellows.—p. 70.
Hereditary Disk Shaped (Ring) Cataract: Report on Family, with Microscopic Examination of Eye. E. S. Haro.—p. 82.

Diisopropyl Fluorophosphate in Treatment of Glaucoma.—Leopold and Comroe administered diisopropyl fluorophosphate over a period of six months to 52 patients with glaucoma in one or both eyes. The patients had a total of 78 glaucomatous eyes. Other miotic agents usually had been tried before this drug was used. Patients to be treated were hospitalized, so that intraocular tensions might be estimated with a Schiøtz tonometer. Visual acuities and visual fields were tested, and ophthalmologic examinations were made weekly or biweekly. Solutions of 0.005 per cent diisopropyl fluorophosphate in oil failed to lower intraocular tension. Subsequent clinical trial indicated that 0.05, 0.1 and 0.2 per cent concentrations in oil are suitable in simple glaucoma. When a 0.2 per cent solution was ineffective, little was gained by using stronger concentrations. In the majority of the glaucomatous eyes treated with 0.05 or 0.1 per cent oil solutions of diisopropyl fluorophosphate the intraocular tension was controlled with fewer daily instillations than when either 1 per cent pilocarpine nitrate and/or 0.25 to 0.5 per cent physostigmine salicylate in water was employed. In all glaucomatous eyes successfully treated with pilocarpine or physostigmine diisopropyl fluorophosphate was also effective and usually maintained the intraocular pressure at a lower level. No dermatitis or conjunctivitis due to repetitive use of the drug was encountered. In 36 of 78 glaucomatous eyes in which treatment with pilocarpine or physostigmine had previously failed, diisopropyl fluorophosphate maintained intraocular tension below 30 mm. of mercury. It has several untoward and undesirable ocular effects such as visual blurring, brow ache and eye ache, spasm of accommodation and pericorneal injection. A slight depressant effect on serum cholinesterase could be detected from ocular instillations of diisopropyl fluorophosphate in a few cases, but no systemic symptoms were elicited.

Canadian Medical Association Journal, Montreal

55:97-198 (Aug.) 1946

Comparative Study of Some Commercial Preparations of Oral Penicillin. J. C. Meakins, F. Smith and M. A. Gold.—p. 97.
Treatment in Mental Disease, Especially Psychoneuroses. N. Viner. —p. 101.
Psychogenic Factors in Bronchial Asthma. A. T. Henderson.—p. 106.
Myelofibrosis. J. Kaufmann, A. K. Mathisen and J. D. Palmer.—p. 111.
*Development of Anastomosis Between Coronary Vessels and Transplanted Internal Mammary Artery. A. M. Vineberg.—p. 117.
Cysts of Genital Ducts, Müllerian and Wolffian. E. Smith and A. Strasberg.—p. 119.
Recessive Epidermolysis Bullosa. R. D. Roach.—p. 122.
Gallery of Cases. S. W. Smith.—p. 126.
Acute Suppurative Ventriculitis Secondary to Brain Abscess, with Recovery. D. W. Pratt.—p. 128.
Periarthritis of Shoulder. J. D. McInnes.—p. 131.
Infectious Lymphocytosis. H. F. MacInnis.—p. 133.
Prostatitis on North Atlantic Service. W. E. Collins.—p. 135.
Protruded Cervical Intervertebral Disks—Cause of Brachial Neuritis. E. S. James.—p. 139.
Importance of Radical Treatment in Acute Hand Injuries. L. T. Barclay.—p. 142.

Improving Coronary Circulation.—In order to increase impaired coronary circulation, Beck in 1935 sutured the pectoral muscle to the left ventricle and O'Shaughnessy in 1937 grafted the great omentum on to the left ventricle. Fauteux in 1940 attempted to improve the ventricular wall circulation by ligating the vena magna cordis. Vineberg has approached this problem by transplanting the left internal mammary artery directly into the left ventricular wall. He has done this in three different ways. In the first experiment on 6 dogs the internal mammary artery was tied at its distal end between two ligatures and cut. The free end was drawn through a previously prepared tunnel in the wall of the left ventricle and fixed in this position. In the second experiment, which was carried out on 7 dogs, the internal mammary artery was not cut but freed from its bed in its central portion. A slit was made in the wall of the left ventricle and the artery slung into the wound, where it was held by a free pleural graft or by sutures. In experiment 3 the left coronary sinus and anterior descending branch of the left coronary artery was tied. The internal mammary artery was sutured into the wall of the ventricle as in the second experiment. It was found that when the internal mammary artery is transplanted into the left ventricle of the heart it develops anastomotic channels with the left coronary circulation after four months. This has been demonstrated by the free flow of injection fluid from the cannulated internal mammary artery into the branches of the left coronary artery.

Cincinnati Journal of Medicine

27:425-514 (July) 1946

Persistent Problems of Pneumonia. M. A. Blankenhorn.—p. 425.
Pollution Factors in Urban Atmospheres. C. A. Mills.—p. 441.

27:515-594 (Aug.) 1946

Injuries of Nerves and Tendons of Hand. S. Koch.—p. 515.
Present Status of Fluorine in Relation to Tooth Decay. S. Rabkin. —p. 522.

Florida Medical Association Journal, Jacksonville

33:1-60 (July) 1946

Progress in Abdominal Surgery. F. K. Boland.—p. 28.
Pentothal Sodium Anesthesia in Tonsillectomies. L. M. Wachtel.—p. 31.

33:61-112 (Aug.) 1946

Public Health Problems in Florida. W. T. Sowder.—p. 81.
Anaerobic Streptococcus Infection About Rectum in Supralevator Space. D. McEwan.—p. 84.
Conservative Therapy of Cardiac Tamponade Resulting from Wounds of Heart: Report of 4 Cases. H. M. Anderson and R. W. Starbuck. —p. 86.

Hawaii Medical Journal, Honolulu

5:323-384 (July-Aug.) 1946

Electrocardiographic Response to Exercise in 100 Normal Subjects. H. C. Gotschalk and A. S. Hartwell.—p. 323.
Sulkowitch Test in Diagnosis and Management of Hypocalcemic Tetany of Newborn and Infants. T. Yoshina.—p. 327.
Extrauterine Abdominal Pregnancy: Review and Case Report. H. R. Benson.—p. 330.

Journal of Bacteriology, Baltimore

52:1-154 (July) 1946

Botulinum Toxin (Type A), Including Study of Shaking with Chloroform as Step in Isolation Procedure. C. Lamanna, H. W. Eklund and Olive E. McElroy.—p. 1.
Taxonomic Position of Corynebacterium Acnes. H. C. Douglas and Shirley E. Gunter.—p. 15.
Separation of Different Strains of Bacteriophage from Crude Culture. J. Kleczkowska.—p. 25.
*In Vitro Studies Concerning Action of Penicillin on Viridans Streptococci, Including Observations on So-Called Synergistic Effect of Sulfonamide Drugs. B. F. Massell, Mary Meyeserian and T. D. Jones. —p. 33.
Strain Variation as Factor in Sporulating Properties of So-Called Bacillus Globigii. A. E. Hayward, J. A. Marchetta and R. S. Hutton. —p. 51.
Sampling Devices for Air Borne Bacteria. M. Luckiesh, A. H. Taylor and L. L. Holladay.—p. 55.
Effect of Streptomycin on Proteus Infections of Chick Embryo. Z. J. Ordal and Esther Meyer.—p. 67.
Studies on Death of Bacteria at Low Temperatures: II. Comparative Effects of Crystallization, Vitromelting and Devitrification on Mortality of Escherichia Coli. R. S. Weiser and Clarice O. Hargiss. —p. 71.
Relative Activity of Penicillins F, G, K and X Against Spirochetes and Streptococci in Vitro. H. Eagle.—p. 81.
Activity of Penicillin in Relation to Bacterial Spores and Preservation of Milk. H. R. Curran and F. R. Evans.—p. 89.
Nature of Acid Fast Stain. C. Lamanna.—p. 99.
Influence of "Folic Acid" Deficiency in Macaca Mulatta on Susceptibility to Experimental Poliomyelitis. H. C. Lichstein, K. B. McCall, C. A. Elvehjem and P. F. Clark.—p. 105.
Cetyl Pyridinium Chloride: I. Germicidal Properties. R. Quisno and M. J. Foter.—p. 111.
Effect of Environmental Conditions on Penicillin Fermentations with Penicillin Chrysogenum X-1612. J. J. Stefaniak, F. B. Gailey, F. G. Jarvis and M. J. Johnson.—p. 119.
Comparison of Penicillin Producing Strains of Penicillium Notatum-Chrysogenum. F. B. Gailey, J. J. Stefaniak, B. H. Olson and M. J. Johnson.—p. 129.

Action of Penicillin on Viridans Streptococci and Synergistic Effects of Sulfonamide Drugs.—Massell and his associates observed in studies on the in vitro action of penicillin on various strains of viridans streptococci that concentrations of penicillin above the minimal concentration necessary for bacteriostasis have a bactericidal action. For any strain there is a critical concentration of penicillin beyond which further increases in concentration have no increased bactericidal activity. Strains of viridans streptococci differ not only in regard to the minimal concentration of penicillin necessary for bacteriostasis but also in regard to the rate at which they are killed in the presence of an excess of penicillin. There is need for further studies concerning the possible correlation of these two variables. Variations in the number of exposed organisms do not appreciably alter the rate of the bactericidal action of penicillin. Sulfonamide drugs seem to have the following effect on the in vitro action of penicillin: 1. The minimal effective concentration of penicillin is reduced for many strains of viridans streptococci. 2. In the presence of penicillin in amounts above the minimal effective concentration, sulfonamides do not appreciably alter the bactericidal action of the penicillin.

Journal of Immunology, Baltimore

53:209-302 (July) 1946

- Production of Typhoid Antibodies in Rabbits with Use of Living Typhoid Organisms Adsorbed on Aluminum Cream. L. S. Mann and Isadore M. Spinka.—p. 209.
- Action of Antimony and Some Other Bacteriostatic Substances on Donovania Granulomatis Isolated in Chick Embryo. W. I. B. Beveridge.—p. 215.
- Studies of Complement Fixation Reaction in Virus Systems: I. Activities of Vaccinia Virus Antigens and Antisera. Christine E. Rice.—p. 225.
- Immunochemistry of Toxins and Toxoids: I. Solubility and Precipitation of Tetanal Toxin and Toxoid in Methanol Water Mixtures Under Controlled Conditions of *p*H, Ionic Strength and Temperature. L. Pillemer.—p. 237.
- Studies on Chemotherapy of Viruses in Psittacosis-Lymphogranuloma Venereum Group: IV. Effect of Certain Chemotherapeutic Agents on Psittacosis Virus (6BC Strain) Infections in Mice. R. L. Early and H. R. Morgan.—p. 251.
- Studies on Lymphogranuloma Venereum Complement Fixing Antigens: I. Enhancement by Phenol or Boiling. Clara Nigg, M. R. Hilleman and Betty M. Bowser.—p. 259.
- Id.: II. Serologic Studies with Boiled Phenolized Antigens. Betty M. Bowser and Clara Nigg.—p. 269.
- Recovery of Poliomyelitis Virus from Stools of Experimentally Infected Monkeys and Chimpanzees. J. L. Melnick.—p. 277.
- Increased Antigenicity of Shigella Paradysenteriae (Flexner) in Saline in Mineral Oil Emulsion: Experiments in Mice and Rabbits. S. P. Halbert, S. Mudd and J. Smolens.—p. 291.

Journal Industrial Hygiene & Toxicology, Baltimore

28:113-166 (July) 1946

- Toxicology of 1,2-Dichloroethane (Ethylene Dichloride): V. Effects of Daily Inhalations. L. A. Heppel, P. A. Neal, T. L. Perrin, K. M. Endicott and V. T. Porterfield.—p. 113.
- Microdetermination of Antimony in Biologic Material: Spectrographic Method. J. Cholak and D. M. Hubbard.—p. 121.
- Therapeutic and Prophylactic Effect of Methemoglobinemia in Inhalation Poisoning by Hydrogen Cyanide and Cyanogen Chloride. B. J. Jandorf and O. Bodansky.—p. 125.
- Electronic Counting and Size Determination of Particles in Aerosols. A. C. Buyton.—p. 133.
- *Chronic Phosphorus Poisoning. H. Heimann.—p. 142.
- Ventricular Fibrillation Induced by Hydrocarbons and Epinephrine. M. B. Chenoweth.—p. 151.
- *Mercury Hazards in Seed Treating. H. F. Schulte.—p. 159.
- Atmospheric Pollution: New Term and Classification Covering Substances Suspended in Air or Dissolved by It. J. Bandeira de Mello.—p. 162.

Chronic Phosphorus Poisoning.—Heimann reports 3 instances of phosphorus necrosis of the jaw. The first patient was a man aged 40 who had been employed for eight years in the conversion department of a phosphorus plant in which yellow phosphorus was converted into red allotrope. In the radical operation that was performed the integrity of the involucrum and periosteum was not maintained. This resulted in a permanent defect of the jaw. The occurrence of joint pains in this patient is interesting, because rheumatic pains are frequent in workers exposed to yellow phosphorus. The second patient was a man aged 25 who was employed for two years in the same working area as the first patient. His illness began with pain in the region of the left lower molar teeth. Early and conservative therapy resulted in no loss of vital bone structure. The "cystic" appearance of the bone lesions is typical of early phosphorus necrosis of the jaw. The third patient, a man aged 35, had been employed in the packaging of yellow phosphorus for thirteen years. This case shows that when the upper jaw is affected in phosphorus necrosis the disease is especially serious because of its proximity to other vital structures. Upper jaw involvement responds poorly to therapy. The measures for prevention of poisoning by phosphorus are all directed at the yellow allotrope. There is no evidence that red phosphorus is poisonous. Medical control is directed essentially to the mouth. There must be preplacement and periodic medical examinations of all employees who work in areas where yellow phosphorus is handled. No one should be permitted to be employed at these processes unless his dental condition is excellent.

Mercury Hazards in Seed Treating.—Schulte says that the processing of seeds to protect them against fungi that might cause rotting in the soil before germination involves the use of mercury compounds of an extremely toxic nature in an industry where such hazards are otherwise rare. Both mercurial poisoning and dermatitis have been caused by these compounds. Ventilation, good housekeeping, personal protective equipment and adequate sanitation properly applied are needed to protect workers from these hazards.

Journal-Lancet, Minneapolis

66:209-240 (July) 1946

- Massive Hemorrhage from Upper Digestive Tract. W. W. Arrasmith.—p. 209.
- Treatment of Prostatism. O. E. Sarff.—p. 215.
- Hypochromic Anemia: Treatment with Molybdenum Iron Complex. J. C. Healy.—p. 218.
- Report on Use of 2,000 Units of Dried Plasma Under Statewide Health Department Program. M. E. Koons.—p. 222.
- Looking Ahead in Health Service. R. I. Canuteson.—p. 227.
- Future Prospects for Physicians. Judith Grunfel.—p. 229.
- Biliary Obstruction in Newborn, with Recovery. E. C. Burke and E. S. Platou.—p. 232.

66:241-276 (Aug.) 1946

- Spontaneous Rupture of Hydronephrotic Kidney: Case. R. G. Scherer and J. K. Odegard.—p. 241.
- Serology and Obstetrics: II. R. T. La Vake.—p. 244.

Journal of Nat. Cancer Inst., Washington, D. C.

6:303-378 (June) 1946

- Inhibition and Stimulation of Tumor Homoiotransplants by Prior Injections of Lyophilized Tumor Tissue. G. D. Snell, A. M. Cloudman, Elizabeth Failor and Patricia Douglass.—p. 303.
- Enzymatic Activity of Normal and Neoplastic Tissues of Rat. J. P. Greenstein and Florence M. Leuthardt.—p. 317.
- Reactions of Bis (2-Chloroethyl) Sulfide (Mustard Gas) and Some of Its Derivatives with Proteins and Amino Acids. J. L. Hartwell.—p. 319.
- Liver Necrosis and Induction of Carbon Tetrachloride Hepatomas in Strain A Mice. A. B. Eschenbrenner and Eliza Miller.—p. 325.
- Quantitative Histologic Analysis of Effect of X-Radiation on Interstitial Tissue of Testes of LAF_1 Mice. A. B. Eschenbrenner and Eliza Miller.—p. 343.
- Increase in Incidence of Lung Tumors in Strain A Mice Following Long Continued Irradiation with Gamma Rays. E. Lorenz, W. E. Heston, Margaret K. Deringer and A. B. Eschenbrenner.—p. 349.
- Sulfhydryl Groups in Cathepsin of Rat Lymphosarcoma. Mary E. Maver and J. W. Thompson, with technical assistance of Antoinette Greco.—p. 355.
- Effect of Level of Dietary Protein on Vascular Repair in Wounds. H. W. Chalkey, G. H. Algire and H. P. Morris.—p. 363.
- Quantitative Studies on Latent Period of Tumors Induced with Subcutaneous Injections of Agent of Chicken Tumor I: II. Estimation of Latent Period. W. R. Bryan.—p. 373.

Journal of Nervous and Mental Disease, New York

104:1-122 (July) 1946

- Disseminated, Diffuse and Transitional Demyelination of Central Nervous System: Clinicohistopathologic Study. L. Roizin, M. Helfand and J. Moore.—p. 1.
- Cerebral Vascular Occlusions in Young Adults. I. S. Ross.—p. 51.
- Clinical Study of Postdiphtheritic Polyneuritis. R. F. Perkins and M. W. Laufer.—p. 59.
- Enuretic Soldier in AAF Basic Training Center: Study of 172 Cases. H. H. Benowitz.—p. 66.
- Personality Reaction to Crime and Disease. D. Abrahamsen.—p. 80.
- Huntington's Chorea: Report of Case. S. M. Lesse.—p. 84.

Michigan State Medical Society Journal, Lansing

45:703-830 (June) 1946

- Otitis Externa. M. D. Campbell.—p. 767.
- Benadryl in Hay Fever, Asthma and Vasomotor Rhinitis. S. E. Barnett, F. M. Barbas and S. B. Goss.—p. 771.
- Therapeutic Abuse of Thyroid Substance. W. S. Reveno and R. C. Moehlig.—p. 776.
- Adoption Procedure and Medical Practice Under New Law: Role of Physician. D. Feld.—p. 779.
- Cancer Education in Rural Area. A. E. Heustis.—p. 782.

45:831-998 (July) 1946

- Study of Construction, Impairment and Reconstruction of Pelvic Floor: Engineering Problem. C. W. Barrett.—p. 899.
- Interpretation of Serologic Reports for Syphilis, with Special Reference to False Positive Reactions. Venereal Disease Control Committee, Michigan State Medical Society.—p. 913.
- Syphilis and Penicillin Therapy. Venereal Disease Control Committee, Michigan State Medical Society.—p. 916.
- Possibilities of Cure in Far Advanced Cancer. Case Reports: "Curative" Operations on Far Advanced Growths; Cancer Still Localized at Necropsy. H. C. Saltzstein, J. O. Rao and J. A. Yared.—p. 919.

New England Journal of Medicine, Boston

235:71-100 (July 18) 1946

Surgery of Innominate Artery. G. E. Lindskog.—p. 71.
Outline for Treatment of Severe Burns. S. M. Levenson, R. W. Green and C. C. Lund.—p. 76.
*Effervescent Mixtures as Adjuvants to Rapid Absorption of Ingested Drugs. G. Lolli and Ruth Smith.—p. 80.
Neurology. H. H. Merritt.—p. 84.
Infectious Hepatitis.—p. 89.
Pinealoma.—p. 91.

Effervescent Mixtures to Speed Absorption of Ingested Drugs.—Lolli and Smith describe experiments on 3 healthy persons. The rate of gastric emptying after a test meal was determined. Control determinations were made with water administered ten minutes after the test meal. Later the water was replaced on separate occasions by an equal volume of fluid containing 1.5 Gm. of tartaric acid, 2 Gm. of sodium bicarbonate or an effervescent mixture of 1.5 Gm. of tartaric acid and 2 Gm. of sodium bicarbonate. The rate of emptying was not appreciably influenced by tartaric acid but was greatly shortened by sodium bicarbonate and by an effervescent mixture of the two substances. After determining the volume and hydrogen ion concentration of the stomach contents following the administration of various types of effervescent mixtures, the authors record blood concentrations of sulfathiazole, following its ingestion with and without an effervescent mixture. Another table lists blood concentrations of salicylic acid following the ingestion of acetylsalicylic acid with and without other substances. Attempts at hastening the rate of gastric emptying seem warranted when a quick effect of a drug orally administered is required with minimum irritation of the stomach. The effect attendant on the administration of an effervescent mixture seems to be due in part to the presence of weak alkaline salts and in part to the production of carbon dioxide.

New Jersey Medical Society Journal, Trenton

43:265-306 (July) 1946

Diabetes in Pregnancy. Elisabeth B. Ward.—p. 267.
Electric Shock Therapy in Army General Hospital. L. Reznikoff. —p. 269.
Role of Physician in Adoption. F. I. Krauss.—p. 271.
Theophylline in Treatment of Migraine: Preliminary Report. R. B. Marin.—p. 274.
Body Fluid Balance, with Particular Reference to Heart Failure. W. Stein.—p. 276.
Penicillin in Syphilis and Gonorrhea. T. W. McParland, A. J. Casselman and H. Hendrickson.—p. 279.

43:307-356 (Aug.) 1946

Neuropsychiatric Problems in Veteran and His Family. J. C. Yaskin. —p. 310.
Importance of Rectal Bleeding. J. Gerendasy.—p. 315.
Fitting of Hearing Aids. Eva A. Thompson.—p. 317.
Massive Doses of Vitamin D in Pediatric Practice. I. J. Wolf.—p. 321.
Diarrhea in Army General Hospital. M. Kraemer.—p. 325.
Preoperative and Postoperative Care of the Diabetic. W. Nyiri.—p. 329.
Recent Advances in Ocular Therapy. I. H. Leopold.—p. 332.
Tribute to Dr. Coit. P. Hosp.—p. 337.
The Physician and Social Security. P. Kasius.—p. 342.

Pennsylvania Medical Journal, Harrisburg

49:1065-1176 (July) 1946

Psychiatric Disease Amenable to Care in General Hospital. J. C. Yaskin.—p. 1081.
Meningitis (Nontuberculous) in Children: Clinical Report on 146 Cases. J. A. Jones.—p. 1085.
Tyrothricin: Review of Selected Literature on Subject. F. C. Massey. —p. 1090.
Clinical Application of Liver Function Tests. C. Moses.—p. 1095.
Experiences on the Ledo Road. I. S. Ravdin.—p. 1128.

Physiological Reviews, Baltimore

26:319-478 (July) 1946

Chemotaxis in Leukocytes. M. McCutcheon.—p. 319.
Physiology of Nervous Systems of Invertebrate Animals. C. L. Prosser. —p. 337.
Pharmacology of Veratrum Alkaloids. O. Krayer and G. H. Acheson. —p. 383.
Arthropod Nervous Systems: Review of Their Structure and Function. J. H. Welsh and W. Schallek.—p. 447.

Radiology, Syracuse, N. Y.

47:1-106 (July) 1946

*Early Pneumoencephalographic Findings Following Penetrating Wounds of Brain. J. E. Lofstrom, J. E. Webster and R. C. Schneider.—p. 1.
Scout Film of Abdomen. J. Levitin.—p. 10.
Emptying of Normal Gallbladder with Priodax. B. Copleman.—p. 30.
Pantopaque Myelography: Diagnostic Errors and Review of Cases. G. L. Maltby and R. C. Pendergrass.—p. 35.
Iodinated Organic Compounds as Contrast Media for Radiographic Diagnoses: V. Escape of Pantopaque from Intracranial Subarachnoid Space of Dogs. W. H. Strain, J. D. French and G. E. Jones.—p. 47.
Delayed Excretory Urography: Value of Twenty-Four Hour Urogram. N. Heilbrun and G. Chittenden.—p. 51.
*Pulmonary Calcifications: Roentgenographic Observations in Relation to Histoplasmin and Tuberculin Reactions. H. B. Zwerling and Carroll E. Palmer.—p. 59.
Tenia Saginata: Case Report. J. B. Hamilton.—p. 64.
Roentgenography of Adenoids. H. L. Weitz.—p. 66.

Penetrating Wounds of Brain.—Lofstrom and his associates report 23 pneumoencephalographic studies made during the care of 256 patients with penetrating cranial wounds. The time at which the pneumoencephalograms were made varied from fourteen to ninety days after the original injury, which corresponds essentially with the date of primary débridement. Following loss of cerebral tissue an enlargement of the ipsilateral ventricle was usually observed. When serious loss of tissue occurred, the contralateral ventricle also dilated and the ventricular system shifted to the affected side. The ventricular enlargement was usually proportional to the loss of tissue. Ventricular distortions occurred with small bone defects and in the presence of a tightly closed dura or dural graft. Ventricular enlargement occurred at an early period following primary débridement. During this period the hydrodynamic effect is largely a mechanical factor compensating for the loss of cerebral tissue. The common finding of localized or generalized adhesive arachnoiditis indicates a disruption of the normal cerebrospinal fluid elimination mechanism, which is of significance. It seems likely that further progression of ventricular dilatation will occur.

Pulmonary Calcifications.—Zwerling and Palmer examined 6,199 student nurses by roentgenography and tested them with tuberculin and histoplasmin. Of this number 698 showed pulmonary calcification. Among the latter group 57 were tuberculin positive, 494 were histoplasmin positive and 109 had positive reactions to both tuberculin and histoplasmin. Of the 698 persons with definite or probable calcification only 38 (5.4 per cent) were negative to both tuberculin and histoplasmin. The level of tuberculin sensitivity was approximately the same in Kansas City, Mo., as in Philadelphia, 26.3 and 26.6 per cent respectively. Four times as many student nurses showed calcification in Kansas City as in Philadelphia, and over four times as many were sensitive to histoplasmin. This suggests an association between pulmonary calcification and sensitivity to histoplasmin in the Central Eastern states. It is likely that this sensitivity is an indication of previous infection with Histoplasma capsulatum or an immunologically related organism and that infection with this organism is not necessarily grave but is widespread in subclinical form. Since in most instances it had not been possible to distinguish between tuberculin positive and histoplasmin positive calcification it may be inferred that during the active phase of the infection the x-ray appearance of the benign form of histoplasmosis can resemble tuberculosis. Consideration of the tuberculin reaction and the recovery of the tubercle bacillus is therefore essential for the final diagnosis of pulmonary tuberculosis.

South Carolina Medical Assn. Journal, Florence

42:183-208 (July) 1946

Proctologist's Message to General Practitioner. L. J. Hirschman. —p. 183.
Nutritional Status of People of South Carolina. J. P. Price.—p. 186.
Congenital Malformations Following Rubella in Mother: Some of Public Health Aspects. J. W. Davis Jr.—p. 190.

42:209-240 (Aug.) 1946

Anti-Histamine Agents. W. H. Kelly.—p. 209.
Hot Weather Pediatrics. J. I. Waring.—p. 211.
Amenorrhea, Its Causes and Treatment. R. F. Zeigler, Jr.—p. 213.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

2:77-110 (July 20) 1946

Total War on Cancer. G. F. Stebbing.—p. 77.
Observations on Liver Function Tests in Diseases Not Primarily Hepatic. A. B. Carter and N. F. Maclagan.—p. 80.
Rheumatic Fever in R. A. F.: Results of Treatment at Convalescent Center. H. S. Barber.—p. 83.
Erythroblastosis Fetalis. Margaret Venters.—p. 84.
Achromotrichia in Tropical Malnutrition. W. Hughes.—p. 85.
Conus Medularis Syndrome in Spinal Contusion. G. A. Ransome, R. K. A. van Someren and J. F. Stokes.—p. 87.

2:111-148 (July 27) 1946

Study of Onset and Cycle Development of Sprue Syndrome. K. D. Keele.—p. 111.
*Surgery and Relapse Rate of Malaria. W. Kark.—p. 114.
Vinesthene Anesthesia for Repair of Hare Lip and Cleft Palate. Phyllis F. L. Daplyn.—p. 117.
Case of Polyneuritis Due to Gold. E. J. R. Leiper.—p. 119.
Case of Myiasis Due to Warble Fly Larvae. A. Smith and D. P. Greaves.—p. 120.
Vitamin C Nutrition in Northeast England. J. Black.—p. 122.

Surgery and Relapse Rate of Malaria.—Kark reports 153 cases in which 176 operations were performed. Previous attacks of malaria had occurred in some of these, while in others without such a history early postoperative attacks suggested a previous latent malaria. In all these cases no form of suppressive or prophylactic antimalarial treatment was given. There was a postoperative attack of malarial fever in 10 per cent. The conditions under which observations were made render it certain that this figure of 10 per cent is in excess of the relapses brought on by surgical operation. The investigation tends to throw doubt on the assumption that surgery commonly precipitates relapses of malarial fever. The relapse rate was practically the same whether the surgical operation had been of major or minor variety. Local analgesics containing epinephrine were followed by a higher proportion of attacks of fever than were other forms of anesthesia. Three or more attacks of malarial fever during a period of two years preceding operation appeared to confer some immunity and to reduce the incidence of postoperative relapse. A first or second attack within a period of six months preceding operation seemed to increase the liability to postoperative malaria. The findings in this group of cases were compared with those found in 147 operations on patients who had received and completed suppressive treatment before operation. The postoperative relapse rate in these cases was found to be practically the same as that in which suppressive treatment had not been administered. In the third group of 1,900 surgical battle casualties suppressive quinacrine, instituted a considerable time before the battle trauma and continued throughout the period in the hospital, virtually eliminated postoperative malaria.

Lancet, London

2:*109-148 (July 27) 1946*

Effects of Use and Disuse on Nerve and Muscle. J. Z. Young.—p. 109.
Penicillin Sensitivity of Bacterium Typhosum. R. W. Evans.—p. 113.
*Sulfathiazole and Penicillin in Typhoid Fever: Report of 6 Cases. C. J. McSweeney.—p. 114.
Malaria Transmission in Borneo. J. N. McArthur.—p. 117.
Penicillin via Fallopian Tubes. A. R. Frisk and A. Westman.—p. 118.
Digestibility of High Extraction Wheaten Flours. R. G. Booth and T. Moran.—p. 119.

Sulfathiazole and Penicillin in Typhoid.—A patient with typhoid was given doses of penicillin appropriate for a staphylococcic infection with no appreciable effect on the pyrexia or blood cultures, although toxemia was much lessened and there were no complications due to ulceration. Four patients with typhoid were treated intensively with penicillin and sulfathiazole, receiving two courses each comprising 10,000,000 units of penicillin and about 34 Gm. of sulfathiazole given in four days. Speedy disappearance of toxemia, subsidence of pyrexia and disappearance of organisms from the blood, feces and urine followed the end of the second course in 3 of the 4 cases. In the fourth case, when the second course was postponed for about a fortnight there was a relapse, which rapidly subsided when the second course was initiated. Another patient with severe typhoid was treated with the combination of penicillin and sulfonamides and the conclusion was reached that there appears to be a strong case for extending this new treatment to the typhoid carrier state.

Paris Médical

1:249-264 (June 8) 1946

*Mental Anorexia and So-Called Hypophysial Cachexia (Conclusions Drawn from 13 Observations). J. Decourt.—p. 249.
Myxedematous Anasarca. R. Cachera.—p. 254.

Mental Anorexia and Hypophysial Cachexia.—Decourt reports 13 cases of a syndrome consisting of amenorrhea, anorexia and rapid cachexia in girls and young women between the ages of 15 and 32 years. The loss of body weight varied from 11 to 33 Kg. In 12 of the cases recovery resulted from psychic therapy and particularly from the resulting resumption of absorption of food in the absence of any opotherapy. The incidence of Simmonds's disease, conceived as a purely organic disorder due to primary atrophy of the anterior lobe of the pituitary, is rare. A large number of cases which were reported as Simmonds's disease should be reconsidered on the concept of mental anorexia. The latter condition results primarily from a psychic disorder, although a disorder of the diencephalohypophysial function may play some part in the physiopathology of mental anorexia and may explain the inaugural character of the amenorrhea. In considering mental anorexia as a psychoendocrine disorder, its origin as well as its therapy remains psychic. Complete recovery occurs from mental reeducation associated with isolation, rest in bed and resumption of food absorption, provided this treatment is not instituted too late. The return of menstruation within three to five weeks in some of the author's cases may have been the result of psychotherapy rather than that of rebuilding by the nutritive substances. Irreparable damage may have occurred prior to late treatment in cases in which amenorrhea persisted in spite of the restoration of the nutrition balance. Atrophy of the anterior lobe of the pituitary may be not only the cause but also the sequel of denutrition.

Schweizerische medizinische Wochenschrift, Basel

76:453-476 (May 25) 1946

Results of New Local Treatment for Hay Fever. H. Fredenhagen. —p. 453.
Does Leriche's Intraperitoneal Procaine Hydrochloride Injection Prevent Operative Shock in Intervention on Peritoneum? Third Note. E. Frommel and J. Piquét.—p. 455.
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*Hydronephrosis and Glomerulonephritis: Experimental Study. F. Reubi. —p. 457.
Behavior of Plasma Proteins After Birth. G. A. Lindeboom.—p. 461.
Humoral Control of Gastric Secretion Phase. B. Uvnäs.—p. 463.
Acute Alcohol Intoxication and Motor Car Accidents: IV. Alcohol Intoxication in Federal Traffic Law. E. Martin-Achard.—p. 465.

Hydronephrosis and Glomerulonephritis.—Reubi produced unilateral hydronephrosis in 2 rabbits by ligation of the ureter. At intervals of ten and thirty days respectively a hematogenous glomerulonephritis was produced in both experimental animals by the method of Masugi (injection of duck antiserum); only extremely mild inflammatory changes were, however, produced in the glomeruli of the kidneys in which the ureters had been ligated. The flow of blood in the corpuscles of Malpighi proved sufficient. Contrary to the view of other authors, it is not to be considered as assuming an important role in this phenomenon. The pressure of the urine on the wall of the pelvis of the kidney, which consequently tends to compress the loops of the glomeruli, did not exceed 20 cm. of water. With the full value of the oncotic pressure it remained inferior to the glomerular tension, but it proved equal to the pressure of filtration and exercised itself in the contrary way. It became evident that the urinary stasis is efficient in protecting the glomeruli by opposing the filtration of a toxin which results from the antigen-antibody reaction. The existence of such a toxin and its role in the pathogenesis of nephritis seem to be supported by these experiences.

Book Notices

The Management of Fractures, Dislocations, and Sprains. By John Albert Key, B.S., M.D., Clinical Professor of Orthopedic Surgery, Washington University School of Medicine, St. Louis, Missouri, and H. Earle Conwell, M.D., F.A.C.S., Orthopaedic Surgeon to the Tennessee Coal, Iron and Railroad Company, Birmingham, Alabama. Fourth edition. Cloth. Price, $12.50. Pp. 1,322, with 1,316 illustrations. St. Louis: C. V. Mosby Company, 1946.

This volume provides sane, sound and sensible advice for the treatment of fractures, dislocations and sprains. Advice against too early massage or the use of brisement forcé in after-treatment is rightly stressed. Too little reference or description, however, is detailed of efficient mechanical use of the fracture table. This seems unfortunate because it is in this technic that the average man treating fractures fails miserably. Likewise the stand taken on the use of x-ray examination is that of an aid rather than a confirmation of diagnosis and not always to be employed with a belief that clinical observation and diagnosis of fracture remain paramount. This is doubtful teaching.

The need in a textbook of this character for the chapter on workmen's compensation laws affecting fractures is not obvious. The laws of one state differ from the laws in other states.

From the standpoint of the student it is to be regretted that there are given in the text practically no references to the literature on the subjects discussed. The chapters contributed by Drs. Fincher and Brown and the chapter on the spine aided by Dr. A. G. Davis are shining exceptions and consequently much more valuable. The newer substances used for spinal myelography are not mentioned. There is a frequent use of nouns for adjectives. Several misspelled words—especially proper names—are found. Many of the illustrations are so vague and noninformative that they might better have been omitted for space saving. Figures 496, 465 and 454 seem identical, yet are printed three times.

There are frequent solecisms and lapses into informal language, as "red hot case" on page 584. Many of the pages were smudged with ink.

The text consequently, although conforming to orthodox classifications and description of the various phases of the subjects included, is loosely verbose. It wants at least two things: first a literary editor to cut about one third of the words employed and second an art editor to pose the various lesions shown in the photographs of patients covering particularly the backgrounds and to strengthen the reproductions of the rather weak appearing halftones of roentgenograms. Also might be elided the innumerable reproductions from the catalogue of a friendly splint manufacturer. Were this done, were the volume reduced in words, its ponderousness (weight 6½ pounds) would not become such a problem to student and reader and its usefulness would be enhanced. In spite of these points this book will remain one of the most popular trustworthy ones on the subject.

Studies in Hypertony and the Prevention of Disease. By I. Harris, M.D., in co-operation with J. T. Ireland, B.Sc., A.I.C., G. V. James, M.Sc., A.I.C., Edward Cronin Lowe, M.B.E., M.B., B.S., and C. E. Vernon, M.Sc., A.I.C. Cloth. Price, $3. Pp. 114, with 9 illustrations. Baltimore: William Wood & Company, 1946.

This little book purportedly deals with the influence of calcium and cholesterol in the production of hypertension, together with observations on high and low protein diets, and the interrelation of iron, phosphorus, potassium chloride, calcium and sulfur. Included are notes on the periodic examinations of normal subjects, tests for glucose tolerance, fractional gastric analysis, the influence of fats on protein metabolism, and potassium requirements. The book is poorly written and apparently published without editorial supervision. The experimental data submitted are wofully inadequate to prove any contention, yet broad generalizations are drawn and specific statements made. Most of the experiments are with rabbits and without collateral work on man. The reader is left in a quandary as to how many of the definite conclusions regarding human dietary problems could have been made. One has the impression that the answers were already in the minds of the investigators before the experiments were undertaken. Certainly from the data submitted conclusions, even regarding rabbit physiology, could not safely be drawn. The senior author has a deep-seated grudge toward certain members of the Medical Research Council (British) and, reading between the lines, it is evident that he could not voice his opinions in the regular medical journals. Therefore he resorted to the publication of a book, printed in America, to unburden his soul. This was an expedient used by some authors a century or more ago, and many of the passages are reminiscent of the haggling and innuendoes cast before the public in those days. The introduction of the book is chiefly concerned with this controversy, and there are repetitive references to it throughout the work. The senior author is especially verbose, but not eloquent, regarding the action of the council in introducing a higher calcium content into the British bread.

Psychiatry for Social Workers. By Lawson G. Lowrey, M.D., Cloth. Price, $3.50. Pp. 337. New York: Columbia University Press, 1946.

The author has described the data of modern clinical psychiatry in a fashion designed to enable the social worker to recognize and evaluate deviations in mental functioning and to refer clients properly. Emphasis has therefore been placed on indicator symptoms, and theoretical formulations are kept to a minimum. The approach is practical and direct, the relationship of psychiatry to medicine is stressed and the author's healthy attitude is manifest in his eclectic presentation. The first chapter, on the data of psychiatry, contains many useful guides to interviewing. The chapter on clinical combinations of symptoms is of special value to the social worker, who must generally classify the productions of the client as the first step in evaluating the deviation. Among the subjects covered by other chapters are the psychoses, neuroses and psychopathic personalities. The evaluation of treatment possibilities is especially good. The material is sometimes too technical and detailed for the reader who lacks medical training. The presentation of the convulsive disorders has the fault of being oriented toward institutional epileptic patients to the neglect of noninstitutional epileptic patients, who can be helped so much by the doctor and social worker team. A disproportionately large share of this book is devoted to the psychoses at the expense of adequate discussion of the neuroses and psychosomatic problems which constitute a large part of the social worker's case load.

Electrocardiography in Practice. By Ashton Graybiel, M.D., Captain, Medical Corps, U. S. Naval Reserve, Co-ordinator of Research, U. S. Naval School of Aviation Medicine, Pensacola, Florida and Paul D. White, M.D. With the Assistance of Louise Wheeler, A. M., Executive Secretary, the Cardiac Laboratory, Massachusetts General Hospital, Boston, and Conger Williams, M.D., Assistant in Medicine, Harvard Medical School, Boston. Second edition. Cloth. Price $7. Pp. 458, with 323 illustrations. Philadelphia & London: W. B. Saunders Company, 1946.

This edition is a vast improvement over the first. It is much larger, better organized and more systematic. It is divided into five parts. The first part is devoted to principles and technic. In it has been included an excellent summary of chest leads which should help the reader to gain some insight into the recent developments. The description of the manner of interpreting electrocardiograms has been improved by bringing into this section some of the material in the appendix of the previous edition.

The second part deals with the wide variations in the contour of the normal electrocardiogram; included are many new illustrations with the three chest leads CF_2, CF_4 and CF_5, which the authors now employ. The use of the term "most normal" and "least normal" to indicate uprightness of T waves in the chest leads is regrettable; it does not necessarily follow that a taller T is more normal than a smaller upright T.

The third section deals with the arrhythmias. It is introduced by a description of the analysis of an electrocardiogram in order to arrive at a differential diagnosis. This is followed by a brief evaluation of the clinical significance of arrhythmias and an extensive table showing the electrocardiographic findings in the principal arrhythmias. As a whole the illustrations in this section are adequate. In each illustration the legend is divided into an electrocardiographic interpretation, a full presentation of the clinical findings and a comment. Exception may be taken to some of the interpretations. Thus in figure 45 the authors fail to diagnose the shifting pacemaker present. In figure 49 the diagnosis of auricular paroxysmal tachycardia with aberrant conduction is not sustained by the argument; the record may very well be a ventricular paroxysmal tachycardia. In figure 53 (and in other instances dealing with complete auriculoventricular block) it would be preferable to consider that the abnormality of the ventricular complex is due to the location of the idioventricular pacemaker below the bifurcation of the common auriculoventricular bundle rather than to attribute it to bundle branch block. One cannot agree with the definition of ventricular escape given on page 104 or with the interpretation of sinuauricular block in figure 84. It is doubtful that there is auricular standstill in leads 1 and 3 of figure 85.

The fourth section takes up the electrocardiographic contour and patterns encountered in various diseases of the heart. This part has been expanded especially to show chest lead patterns. At the end of the section various artefacts are shown. This section is introduced with a general outline which is brief and to the point. Table 3, which gives a summary of the findings in the principal disturbances of the heart, may be useful to certain types of readers who are impressed with extensive tabular data. A table also is introduced to show the electrocardiographic abnormalities encountered with drugs. This is very extensive but can be criticized in the same manner as table 3. The Q waves in leads 2 and 3 of figure 89 are not prominent. The amplitude of QRS in the chest leads of figure 91 is not large. The authors fail to describe the normal appearance of the chest leads (especially the T wave) in children, which should be useful for comparison with the abnormal appearance found in congenital and rheumatic heart disease in this age group. The section dealing with recent infarction is highly to be recommended.

The last section contains an entirely new series of electrocardiograms for practice in interpretation; they serve their function excellently with a few exceptions. In figure 264 the description and interpretation are inadequate; the premature ventricular systole in lead 3 is not mentioned nor is it distinguished from the nodal escape which causes the last beat in this lead. The first beat in leads 1 and 2 of this electrocardiogram are also premature and the second beats in these leads are nodal escapes. In figure 265 the statement "the auricular action seems somewhat depressed too as though the sinus node were not working well" is ambiguous. Figure 297 is misinterpreted; it shows frequent nodal premature systoles.

In the appendix there is an extensive development of the so-called unipolar leads and of the esophageal electrocardiogram as well as a discussion of the effects of exercise and anoxemia on the electrocardiogram. In the discussion of unipolar leads the authors fall in the trap which is so common in such discussions; they state on page 433 that "the central terminal has a potential of zero" despite the fact that at the beginning of this page they more properly point out that "the potential variation is small enough to be considered zero for this purpose." Even this last statement is subject to debate.

In the illustrations the authors use two types of time lines; in the majority the time lines are 0.1 second apart; in some, however, they are 0.04 second apart. This is not always made clear, and the uninitiated reader may be confused.

It must not be taken from these criticisms, which are few and relatively minor, that the book is inaccurate or inadequate; on the contrary, it is excellent and accurate. The criticisms have been made in the hope that the few errors that have crept in may be remedied in future revisions. This book should be extremely useful to the cardiologist and internist who has some background in the field of electrocardiography and who desires to review the circumstances in which the various arrhythmias and electrocardiographic contours are encountered. He will find especially valuable the integration with the other clinical findings which the "case report" method employed lends itself to so well. To the practicing physician the case report method with stress on the clinical observations will be quite gratifying. He may find that he is learning a great deal of clinical cardiology as well as electrocardiography. The book is recommended.

Phonocardiographie: Auscultation collective (acoustique—technique—clinique). By C. Lian, professeur agrégé à la Faculté de médicine de Paris, G. Minot, et. J.-J. Welti. Préface du professeur A. Strohl. Paper. Pp. 256, with 121 illustrations. Paris: Masson & Cie, 1941.

This monograph, which appeared five years ago, covers the work which Lian and his associates have been concerned with for the past fifteen years. It is divided into three parts. The first deals with the fundamentals of acoustics and the physiology of auscultation in a rather sketchy fashion. The second part deals with technic. The principles of phonocardiographs, in particular the one developed by this French group, is described as well as the special electrocardiograph, the electrokymograph for recording pulsatory phenomena, the cardioscope and the phonograph for recording heart sounds which they developed. The third section deals with the clinical aspects of heart sounds and murmurs and is far more complete. The normal and extra heart sounds, gallop rhythm and cardiac murmurs are extensively reviewed and related to the other events in the cardiac cycle. The final two chapters deal briefly with vascular sounds and murmurs and with recording of abdominal and respiratory sounds. The bibliography included is fairly complete. The clinical section suffers, as do many reports on recorded acoustic phenomena of the heart, because the authors do not clearly distinguish the limits of their instrumental error. The vibration frequencies attributed by them to the various sounds and murmurs may represent to a varying extent the distortions imparted to them by the recording device. Nevertheless, with this limitation, the clinician will be brought up to date on the modern views of the various acoustic phenomena he is apt to encounter, particularly those views of the French school to which Lian has contributed. This monograph does not approach in scholarliness some of the other recent reviews and monographs which have appeared on this subject; however, the cardiologist acquainted with the field will find that it will repay him to peruse it.

Problems in Solutions and Dosage: Arithmetic Review. By Stella Goostray, B.S., M.Ed., R.N., Principal, The Children's Hospital School of Nusing, Boston, Massachusetts. Paper. Price, $1.50. Pp. 99, with 8 illustrations New York: Macmillan Company, 1945.

This volume is no doubt intended as a review or refresher course in the fundamental arithmetical processes together with several chapters which deal with the calculations with which nurses are involved. The forepart of the book, which deals entirely with elementary arithmetical processes, is followed by chapters on the metric and apothecary systems, solutions and dosage. The chapters on solutions and dosage may well prove of value to one who wishes to have available type formulas for calculations on these subjects. Although not being a complete textbook of the calculations with which a nurse may be involved, as a review of the topics it covers it may prove helpful.

Professional Adjustments in Nursing for Senior Students and Graduates. By Eugenia Kennedy Spalding, R.N., M.A. Third edition. Cloth. Price, $3.50. Pp. 509, with 32 illustrations. Philadelphia, Montreal & London: J. B. Lippincott Company, 1946.

This volume is in its third edition, and there are two pages of acknowledgments indicating the extent to which the author has been associated with all the leading agencies in the field of nursing. The book is primarily of interest to nurse educators, economists and public health workers. It covers completely such subjects as social, economic and professional outlook of the graduate nurse, choice of a specialty, the professional organizations in the nursing field, and the legal and professional relationships of nurses. Each section is supplemented with an extensive bibliography and with a series of problems. The appendix is full of valuable reference data. A good index helps to complete the volume.

Analecta Psychiatrica. By J. R. Whitwell, M.B. Cloth. Price, 16s. Pp. 160. London: H. K. Lewis & Co., Ltd., 1946.

The author has collected from a great variety of writers brief paragraphs and notes concerning psychiatric subjects. Here he groups them according to such subjects as suicide, causes of mental disorder and interesting cases. The book should be especially useful to psychiatrists who have agreed to write papers for medical societies.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

HAZARDS TO MEAT PACKING WORKERS

To the Editor:—For the past fifteen years I have taken care of the injuries sustained in a local meat packing house. During that time the great majority of the injuries were lacerations caused by knives with which the employees were working. It has not been my habit during this time to administer prophylactic doses of either tetanus or gas gangrene antitoxin. There have not been any cases of tetanus or gas gangrene developed. My experience would seem to indicate that I need not now begin to use them. However, I should like to know what the usual procedure is in large meat packing houses.

M.D., Ohio.

Answer.—Both tetanus and gas gangrene antitoxin are administered to at least some workers in abattoirs who sustain puncture wounds from hooks on which meat is suspended but not to workers who have lacerations from knives. Puncture wounds occur considerably less frequently than cuts from knives. In fifteen years' experience in one abattoir tetanus or gas gangrene infection has not been observed. Such infections are not usually regarded as occupational hazards of such workers.

Pyogenic infection and infection with Erysipelothrix rhusiopathiae—erysipeloid of Rosenbach—are the chief occupational hazards among workers in abattoirs. Of 100 cases of erysipeloid reported (Klauder, J. V.: Erysipeloid as an Occupational Disease, The Journal, Oct. 8, 1938, p. 1345) 58 were observed among employees in abattoirs and an additional 3 among butchers in retail stores. It was observed in this study that erysipeloid infections occurred in 9 cases despite the application of alcohol, tincture of iodine or mercurochrome at the site of injury immediately or soon after the infliction of injury.

The application of Erysipelothrix rhusiopathiae immune serum to injuries sustained by employees in abattoirs may prevent erysipeloid. In addition to the expense of such serum, its use may interfere with treatment of such injury in the direction of preventing pyogenic infection. The prevention of pyogenic infection is probably of greater importance than is erysipeloid, since the latter infection is invariably a self-limited disease.

Erysipelothrix rhusiopathiae is sensitive to the action of penicillin (Heilman, F. R., and Herrell, W. E.: Penicillin in the Treatment of Experimental Infections Due to Erysipelothrix Rhusiopathiae; Proc. Staff Meet., Mayo Clin. **19**.340 [June 28] 1944). Local application of penicillin may serve the purpose of preventing both pyogenic infection and erysipeloid. Sulfonamide compounds were ineffective in treating Erysipelothrix rhusiopathiae infection experimentally produced in mice (Klauder, J. V., and Rule, Anna M.: "Sulfonamide Compounds in Treatment of Erysipelothrix Rhusiopathiae Infections, *Arch. Dermat. & Syph.* **49**:27 [Jan.] 1944). It is therefore not to be expected that application of a sulfonamide compound would prevent erysipeloid.

GRAFTING OF SCALP

To the Editor:—Is it possible or advisable to graft scalp for plastic procedures? A man aged 42, who received roentgen therapy of the scalp in his youth for a scalp infection, has become entirely bald. The scalp is pitted with telangiectasis and is very unsightly. He has been advised to have a plastic operation.

M.D., Michigan.

Answer.—As a rule the substitution by grafting of hair bearing skin for non-hair bearing scalp is not a satisfactory procedure from the point of view of replacing hair. In the case mentioned in the query, however, the unsightly telangiectatic scalp could be replaced by more normal looking skin. An additional and more important point which should be considered is the possibility of malignant degeneration which may occur a number of years after roentgen therapy. The last alone is ample indication for a plastic operation.

SPASMODIC TWITCHING OF TENSOR TYMPANI

To the Editor:—What are the causes of spasm or fibrillation of the tensor tympani in the absence of any demonstrable focus of irritation in the external auditory canal?

R. J. Dickinson, M.D., Ridgway, Pa.

Answer.—Spasmodic twitching of the tensor tympani is analogous to twitching which frequently occurs in the orbicularis oculi muscle and is the result of nervous fatigue. Increased rest should be advocated, and small doses of a sedative such as phenobarbital may be tried.

NEPHROSIS

To the Editor:—What is the treatment of nephrosis in a child aged 4 years? Is there such a disease as pure nephrosis? It has been my impression that most clinicians believe that a concomitant nephritis exists in these cases. What clinical and laboratory tests are important in establishing a diagnosis and following the progress of the disease? What percentage recover completely?

M.D., New York.

Answer.—While there is probably no such disease as pure nephrosis in the adult whose nephrotic syndrome begins after adolescence, there is undoubtedly a small proportion of children with the syndrome in whom the clinical and pathologic criteria of pure nephrosis are satisfied. Even in these instances the disease is primarily glomerular in origin rather than tubular, as originally believed; but the process in the glomeruli is a degenerative one, without the earmarks of inflammation as seen in glomerulonephritis. Clinically it may be impossible to differentiate pure nephrosis from the nephrotic stage of a mild glomerulonephritis unless the child has been seen very early in the disease. From the standpoint of treatment it makes little difference. The diagnosis of pure nephrosis has been made too often in the past. At the same time it must be emphasized that the extreme rarity of the disease cannot logically be used as a reason for denying its existence.

The criteria for the diagnosis of the pure nephrotic syndrome are both positive and negative. The positive group includes massive proteinuria, hypoalbuminemia, edema and effusions into body cavities, lipemia, casts and epithelial cells, including the lipoid variety, in the urinary sediment and a chronic course. The negative criteria include the absence of a history of acute nephritis, of more than the normal number of red blood cells in concentrated specimens of urine on numerous examinations, of any impairment of renal function not attributable to extrarenal factors, of hypertension and its cardiovascular consequences. Orthostatic albuminuria and cylindruria may persist for years in a child who has recovered from nephrotic glomerulonephritis and lead to a mistaken diagnosis of chronic nephrosis. The absence of other symptoms and signs is the crucial differentiating feature.

The progress of the nephrotic syndrome or disease is best measured in terms of the degree of proteinuria and edema, of the level of the serum albumin and the general state of nutrition, and of the continued absence or gradual appearance of nephritic signs. Acute infections may lead to severe relapses, death or temporary remissions. The so-called nephrotic crisis may occur with severe abdominal pain, fever, vomiting and collapse, with or without signs of bacterial peritonitis. These attacks are usually associated with striking decrease in the amino acid level of the serum (Farr, L. E., and MacFadyen, D. H.: Hypoaminoacidemia in Children with Nephrotic Crises, *Am. J. Dis. Child.* **59**:782 [April] 1940). Confusion with surgical abdominal conditions is easy.

The prognosis in the past has not been too bright for children with nephrosis, although it has been better than in those with progressive chronic glomerulonephritis, hypertension and renal insufficiency. It is probable that the present specific chemotherapy for intercurrent infections will permit a larger percentage of nephrotic children to "outgrow" their disease. Schwartz, Kohn and Weiner (Lipid Nephrosis, *ibid.* **65**:355 [March] 1943) observed 40 cases of nephrosis as the accumulated experience of twenty years, during which time 400 children with glomerulonephritis were seen; 22 of these, or 55 per cent, died within a few years; of the remaining 18, 8 were followed for seven to twenty years, and 6 had reached ages 15 to 23. Of the latter group 4 definitely showed nephritic signs and only 1 of the 8 had a normal urinary red blood cell count. Of the 12 that came to necropsy, 50 per cent showed definite glomerulonephritis, from which the authors rightly concluded that glomerular inflammation must have been present at the very onset. These patients had died between one year and three and one-half years after their illness began. The rest, with survival periods of less than a year, showed either no significant pathologic changes in the glomeruli or some congestion. In all the necropsy cases tubular degeneration was found. In a discussion of this paper Farr reported a mortality of 44 per cent among 36 children with nephrosis observed during a period of six years. Complete recovery occurred in 10 cases, or 28 per cent. In contrast are the figures given by Schwartz, Kohn and Weiner (The Prognosis of Nephritis and Nephrosis in Childhood, *New York State J. Med.* **40**:409 [March 15] 1940) for the 400 children with acute and chronic glomerulonephritis. Of the 244 children with acute nephritis 5.3 per cent died, 84 per cent recovered completely and 12 per cent developed chronic progressive nephritis. In 115 children with a diagnosis of chronic nephritis on their first admission the mortality was 50 per cent within the first year and the total mortality was 60 per cent during the period of observation. Only 8 per cent survived a five year period, and almost all of these patients had active nephritis.

As to treatment, the primary considerations are the maintenance of adequate nutrition to replenish the wasted protein and promote normal growth, the mobilization of edema and the prevention or prompt treatment of intercurrent infections. The diet should be high in calories, vitamins and proteins but low in salt. The last requirement means the use of salt free bread, salt free butter and severe restriction of the use of milk or its products. Calcium has to be supplied directly or in the form of reconstituted sodium free milk (Mead, Johnson & Co.). Edema will usually respond to these dietary measures unless the serum albumin is very low. In such instances, in which mercurial diuresis also is unsatisfactory, the most effective measure is the intravenous injection of salt poor, concentrated human serum albumin in a dosage of 25 to 50 Gm. daily for twenty to thirty or more days, depending on the amount of edema (Thorn and others: *J. Clin. Investigation* **24:**802 [Nov.] 1945). This treatment not only acts to promote diuresis but also favors protein storage and restoration of tissue protein. In some children the ordinary sodium rich concentrated human serum albumin may be effective, but the large amount of salt injected with the protein tends to defeat the purpose of the treatment. Paracentesis of the abdomen or chest should be carried out only when mechanical embarrassment of respiration or circulation exists, since the protein in the discarded fluid is lost to the body and can be regenerated only with difficulty. During a nephrotic crisis, intravenous administration of amino acids may be life saving. Chemotherapy is of course indicated during infections or suspected infections, blood transfusion for anemia and the usual vitamin, liver and iron supplements for nutritional reasons.

TREATMENT OF STOMATITIS AND GINGIVITIS

To the Editor:—Please discuss the treatment of stomatitis and gingivitis (aphthous and ulcerative). R. J. Kent, M.D., Savannah, N. Y.

Answer.—There have been no significant recent advances in the treatment of aphthous stomatitis. In the single acute type spirit of camphor, camphorated phenol, zinc chloride, silver nitrate and other preparations have given symptomatic relief. As a rule the condition is self limited (eight to fourteen days). Vitamin B complex and smallpox vaccine have also been used, particularly in the multiple recurrent type of aphthous stomatitis. The results with smallpox vaccine have not been encouraging.

In ulcerative gingivitis (ulceromembranous gingivitis, Vincent-Plaut disease, Vincent's infection, trench mouth) treatment in the past has depended primarily on four groups of drugs: (1) oxygen liberating agents (zinc peroxide, hydrogen peroxide, sodium perborate, potassium permanganate); (2) spirocheticides (arsenicals, bismuth compounds, mercurials); (3) caustics (copper sulfate, chromic acid, trichloroacetic acid, silver nitrate) and (4) dyes (gentian violet, methylene blue, acriflavine, mercurochrome). The sulfonamides have been used.

PENTACHLORPHENOL

To the Editor:—A man was exposed to pentachlorphenol spray (used in termite control) one month ago and received severe burns on the hands and face. Since then he has developed a severe cough. Examination of the larynx reveals edema, with a thick exudate. Since this is a product with five chlorine ions attached to the phenol radical I assume that he has to all intents and purposes the same reaction as that due to chlorine gas. Is there any treatment that would alleviate his paroxysms of coughing and to hasten resolution of his laryngeal state at this late date?

Carter L. Pitcher, M.D., Portsmouth, Ohio.

Answer. — Since pentachlorphenol is readily absorbable through the skin and mucous membranes, surface exposure may be more significant than for commoner surface irritants. Systemic involvement frequently and possibly regularly accompanies extensive external damage. The nature of the injuries from pentachlorphenol and related phenates is well described by McGavack, Boyd, Piccione and Terranova (*J. Indust. Hyg. & Toxicol.* **23:**239, 1941) and Deichmann, Machle, Kitzmiller and Thomas (*J. Phar.* **76:**104, 1942). The toxemia induced reveals itself through accelerated respiration, fever, glycosuria, hyperglycemia, profound muscular weakness, cardiac and vascular damage, edema and hemorrhage. Anemia and leukopenia may appear. Central nervous system injury may be prominent, and this may be reflected in such manifestations as hyperpyrexia and glycosuria. Persistence of local lesions for six weeks is not extraordinary. In the case described in the query, if the laryngeal dysfunction occurred shortly after exposure, the cause was probably pentachlorphenol. If this condition still persists, careful inquiry should be directed to the neurologic state, the hemopoietic system and the vascular system. No specific therapy for the pathologic condition of the larynx is known. Treatment should be the usual one for respiratory tract edema and bronchitis. The detection of pentachlorphenol in the urine at this remote time seems improbable.

CAUSES OF LIPEMIA

To the Editor:—Please discuss the causes of lipemia. M.D., New York.

Answer.—The normal range of values for blood plasma fats are, in milligrams per hundred cubic centimeters, fatty acids 300 to 400, total cholesterol 110 to 300 (70 per cent esterified) and phospholipid 190 to 260. The wide normal range is undoubtedly due in part to differences in methods of analysis and partially to the nutritional state of the subject at the time of bleeding. A lipemia or hyperlipemia may be manifested by a milky appearance of the plasma, although this change does not occur in every instance. Generally an increase in any one component of the fatty fraction of the blood is accompanied with some degree of elevation of the other components, although the increase need not be proportional. There is considerable evidence indicating a relationship between carbohydrate metabolism and lipemia. Insulin lowers the blood fat of lipemic diabetic patients and simultaneous glucose administration inhibits alimentary lipemia in normal dogs.

The glands and organs most concerned in carbohydrate metabolism (liver, pancreas, thyroid, pituitary and adrenals) also influence the fat content of the blood Some writers have suggested that the conditions that tend to lower the serum proteins predispose to lipemia. It has been shown that an increase in one or more of the blood fat fractions may occur following fat ingestion, in diabetes mellitus, nephrosis, hypothyroidism, xanthomatosis and severe anemia, after hemorrhage, after volatile anesthetics, in starvation, during pregnancy, in arsenical hepatitis and associated with fatty livers in chronic alcoholism.

THROMBOPENIC PURPURA

To the Editor:— A physician aged 45 has thrombopenic purpura hemorrhagica. There is no history of previous serious illness. Bleeding from the nose, tongue, gums and lips has occurred every three to four nights for the past three weeks. The coagulation and bleeding times are normal the capillary resistance test is negative; platelets number 70,000 to 90,000. The blood picture is otherwise normal. The spleen and liver are moderately enlarged. Please discuss treatment, especially the relation of climate and altitude to this disease. The patient has lived in New York for seven years. Is an altitude of 2,200 feet harmful?

M.D., New York.

Answer.—This is not the usual picture of thrombopenic purpura. Against this diagnosis is the normal bleeding time and normal capillary fragility. Further, bleeding does not usually occur in thrombopenic purpura with a platelet count above 60,000, and the spleen is not palpable in the majority of cases

Other causes of splenomegaly and thrombopenia such as liver disease and leukemia should be excluded. Further laboratory study should include liver function tests, determination of the prothrombin time in the blood and a sternal marrow aspiration.

The treatment of this condition will depend on the cause. Climate and altitude are probably unrelated to the bleeding tendency.

CORNEAL TATTOOING

To the Editor:—The accepted procedure for tattooing the cornea is staining with 2 per cent platinum chloride followed by 2 per cent aqueous hydrazine hydrate. Is there a better method of corneal tattooing?

W. Edward McGarvey, M.D., Jackson, Mich.

Answer.—The technic described in the query gives the best permanent results if the epithelium is scraped off to Bowman's membrane before using the chemicals. It is well to outline the size of the proposed area with a large 4 to 6 mm. trephine in order to have a round "pupil."

RECURRENT MALARIA

To the Editor:—What are the effects of heat, exertion and cold on chronic malaria? Can these cause recurrent attacks of malaria?

Richard A. Wills, M.D., Niagara Falls, N. Y.

Answer.—It has been a constant experience that extremes in temperature, fatigue and particularly alcohol are responsible for precipitating a relapse in malaria. However, the recurrences of this chronic disease can appear without any relationship to known external causes.

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PHARMACOLOGIC BASIS OF CARDIAC THERAPY

HARRY GOLD, M.D.
New York

I have planned to present an account of pharmacologic studies which have a more or less direct bearing on problems of cardiac therapy. I shall confine my remarks, for the most part, to explorations in this field which have been made in recent years by a group of collaborators in our laboratory and clinics.[1] These relate chiefly to investigations made directly on human subjects. The term "clinical study" doesn't rate very high in scientific circles. The belief prevails that the search for facts on drug action in man directly is of necessity inexact, subject to the impressions and prejudices of the observer and not amenable to the strict control of the animal experiment. There are, to be sure, many problems in pharmacology which are inaccessible to study directly on the human subject, but there is a vast area of pharmacologic investigation which may be developed with the human subject and which, if the experiments are suitably designed, may be counted on to yield important facts in a manner which complies with the strictest demands of scientific evidence.

Action of Digitalis in Failure.—How digitalis acts to relieve heart failure has long been a matter of controversy. No doubt exists that the failing heart is able to perform more effectively under the influence of digitalis. However, we were very long in obtaining an answer to the question whether digitalis glycosides act directly on heart muscle to increase the systolic force or whether the action is entirely indirect. A few years ago an answer to that question was supplied by means of a simple preparation of the mammalian heart muscle[2] (fig. 1). The papillary muscle of the right ventricle of the cat, a muscle about 10 mm. long and weighing about 20 mg., was set up on an isometric lever, driven at a fixed rate, and its tension recorded photographically. The muscle soon began to fail, and when its force had fallen to a very low level a digitalis glycoside was administered in a concentration prevailing after therapeutic doses in man, as low as 1 part in 75 million parts of fluid. Within several minutes the force began to rise and reach high levels, at which it remained for many hours. No other chemical material is known which produces such definite and sustained increase in the systolic force of the mammalian heart muscle. While the systolic force rose, the "tone" of the muscle remained unchanged (fig. 2). An increase in the systolic force measured by its tension, as a result of a direct action on the heart muscle, may therefore be taken as the primary mechanism by which digitalis relieves heart failure. Most of the other significant changes in the heart and circulation which occur in patients with heart failure after digitalis follow as secondary adaptations.[3]

Vagal and Extravagal Action of Digitalis.—Slowing of the ventricular rate is one of the outstanding results of digitalis action in auricular fibrillation. Two mechanisms may be seen to be at work.[4] In some instances (fig. 3) blocking the vagus by 2 mg. of atropine sulfate intravenously abolishes the slowing, while in others the atropine has little influence on the slowing. In a further study of the matter we found that in one and the same person the slowing may be vagal at one time and extravagal at another (fig. 10) and further that the deciding factor is the dose of digitalis. As the dose is increased the control of the ventricular rate tends to pass from the vagal to the extravagal mechanism. It is important to note that in the operation of this adaptive mechanism the resting rate may remain unchanged.

In another investigation[5] we observed that physical exercise to the limit of the patient's endurance has the same effect on rate as blocking the vagus with atropine (fig. 4). When slowing is by the vagal mechanism (abolished by atropine) exercise may accelerate the rate to 180 a minute, but when the slowing is by the extravagal mechanism (not abolished by atropine) exercise rarely accelerates the rate above about 100 a minute. This is a matter of some importance in the maintenance of patients with auricular fibrillation. In the treatment of these patients it is not uncommon to find digitalis reducing the rate from 140 to 70 when the patient is at rest. When he is up and about, however, he complains of palpitation and breathlessness. Free physical activity raises the rate to uncomfortable peaks when the mechanism of control is vagal. If larger doses of digitalis are given, the rate control passes to the extravagal mechanism, which prevents the exaggerated acceleration with exercise, even though the resting rate may not be materially lowered. These mechanisms are illustrated diagrammatically in figure 5.

From the Department of Pharmacology, Cornell University Medical College, and Cardiac Services of the Beth Israel Hospital, Hospital for Joint Diseases and Seaview Hospital.

Based on the Alpha Kappa Lecture delivered Feb. 1, 1945 at Syracuse University College of Medicine, and lecture presented at Section of Medicine, New York Academy of Medicine, Dec. 8, 1945.

[1] Collaborators: Drs. McKeen Cattell, Nathaniel T. Kwit, Walter Modell, Harold L. Otto, Janet Travell, Lawrence W. Hanlon (Baird fellow), Theodore T. Fox, Milton Kramer, Harold Rothendler and Miss Jenny Oppenheim.

[2] Cattell, McK., and Gold, H.: J. Pharmacol. & Exper. Therap. **62**: 116 (Jan.) 1938.

[3] Gold, H., and Cattell, McK.: Mechanism of *Digitalis Action in* Abolishing Heart Failure, Arch. Int. Med. **65**: 263 (Feb.) 1940.

[4] Gold, H.; Kwit, N. T.; Otto, H. L., and Fox, T.: J. Clin. Investigation **18**: 429 (July) 1939; J. Pharmacol. & Exper. Therap. **67**: 224 (Oct.) 1939.

[5] Modell, W.; Gold, H., and Rothendler, H. H.: Use of Digitalis to Prevent Exaggerated Acceleration of Heart During Physical Exercise in Patients with Auricular Fibrillation, J. A. M. A. **116**: 2241 (May 17) 1941.

U. S. P. Assay of Digitalis.—The potency of digitalis preparations is known to vary. The latest revision of the U. S. Pharmacopeia adopted the cat method of assay as a means of securing uniformity. In this method the unknown preparation and the Standard Reference Digitalis are injected intravenously into cats and the ratio of their lethal doses is determined. The unknown is so adjusted that 0.1 Gm. produces the effect of 0.1 Gm. or 1 U. S. P. unit of the Standard. This is by intravenous injection in cats. But digitalis preparations differ in their absorbability, and they are usually given by mouth in man. A material that is potent by vein may be weak by mouth if it is poorly absorbed.

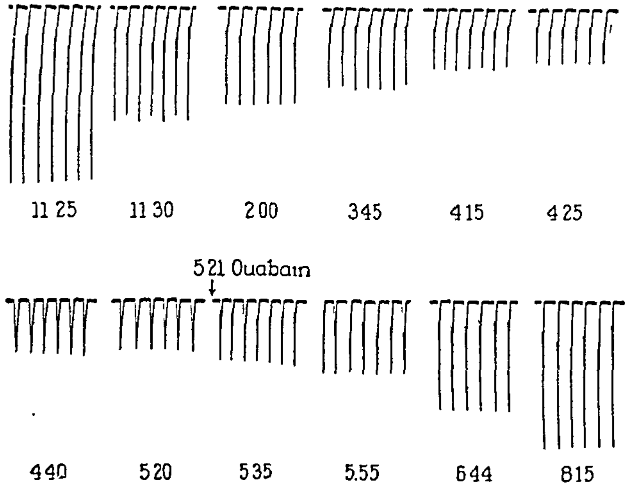

Fig. 1.—Effect of digitalis glycoside on the systolic force of mammalian heart muscle.

Human Assay of Digitalis.—To overcome this difficulty we developed a method for the assay of digitalis preparations by oral administration in man.[6] The method follows the basic principles of bioassay. A suitable sensitive individual is calibrated by the Standard Digitalis Powder of the U. S. Pharmacopeia. Figure 6 shows a case that is (Mi. La.) and one that is not (Es. As.) suitable. Calibration involves ascertaining whether the patient in question can distinguish 25 per cent differences in the doses of the Standard by changes in the T wave of the electrocardiogram. In an assay (fig. 7) a tracing is taken, a dose is given and a second tracing is taken twenty-four hours later for the effect on the T wave. A month is allowed to elapse for elimination. The pair of tracings and a dose of the Standard are repeated at monthly intervals. Each dose is about 25 per cent larger than the previous one. The Unknown is then similarly tested in doses which produce effects falling within the calibration points of the Standard. The matching of electrocardiograms is all done with the "blind test." In this way one determines how much of the Unknown produces the same effect as a given amount of the Standard. Since any 1 patient may show abnormal behavior, the test is repeated on 6 or 8 similarly calibrated patients (table 1). From the average of these, one obtains the amount of the Unknown specimen which produces in human beings, by oral administration, the same effect as 100 mg. of the Standard Reference Powder, or 1 U. S. P. unit. The results by the Human Method are reproducible with a high degree of precision as seen from the potency of preparations reassayed several times[7] (table 2).

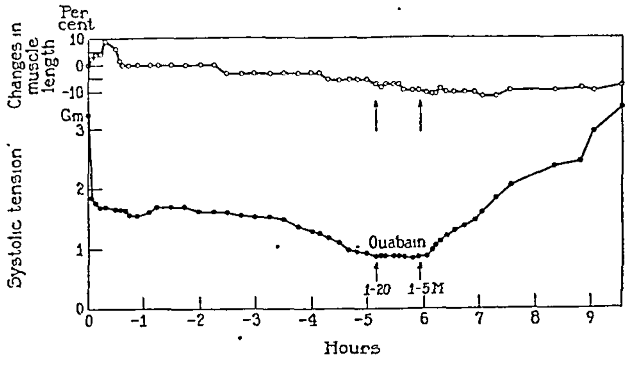

Fig. 2.—Changes in systolic and diastolic tension ("tone") of papillary muscle during action of digitalis glycoside.

How different are the answers by the two methods of assay? We have secured some idea about that from a series of preparations which were tested by the two methods. The results are shown in table 3. Imagine each of these preparations put up in a tablet of 1 U. S. P. unit as determined by the official intravenous cat method. You will note that for different specimens of digitalis labeled 1 U. S. P. unit one tablet may produce three times as much effect as another, and in the case of purified glycosides one tablet may produce about ten times as much effect as another. This matter is quite serious if it is not clearly understood, for 10 U. S. P. units of lanatoside C (Cedilanid) would be insufficient to digitalize a patient, whereas 10 U. S. P. units of digitoxin might prove fatal. The human method of assay seems to be the only present remedy to the problem of securing uniformity of digitalis preparations for oral administration in man.

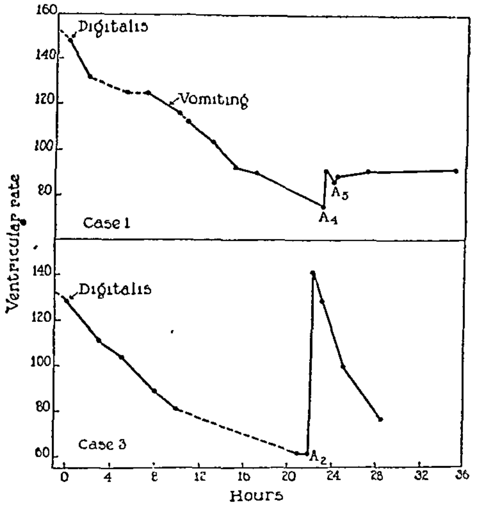

Fig. 3.—Effect of atropine sulfate after digitalis in 2 cases of heart failure with auricular fibrillation. Each patient received a large dose of digitalis and showed the usual response. Each intravenous dose of atropine sulfate (A_2, A_4, A_5) was 2 mg.

Absorption of Digitalis Glycosides.—We may now turn to the subject of the absorption of digitalis materials from the gastrointestinal tract. We approached the study of this matter by comparing the size of the oral and intravenous doses necessary to produce the same effect in patients with auricular fibrillation. This ratio of oral to intravenous dose is a practical index of absorption for the vast majority of digitalis materials. The patient is put to bed, the ventricular rate is counted several times daily during a control period, and, when the rate has stabilized, a large dose is given at one time by mouth or by vein as the case may be, and similar counts of the ventricular rate are made at frequent intervals during the day until the full effects have developed. By means of this method it was found that digitoxin is practically completely absorbed[8] (fig. 11), since a dose produces the same effect whether given by mouth or by vein. About 20 per cent of a dose of digitalis is absorbed, and only about 10 per cent of a dose of lanatoside C (fig. 8). Complete absorption from the gastrointestinal tract is a rare experience in pharmacology. There are very few drugs for which the oral and intravenous doses are the same.

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[6] Gold, H.; Cattell, McK.; Otto, H. L.; Kwit, N. T., and Kramer, M. L.: J. Pharmacol. & Exper. Therap. **75**: 196 (July) 1942.

[7] Gold, H.: Federation Proc. **3**: 72 (March) 1944.

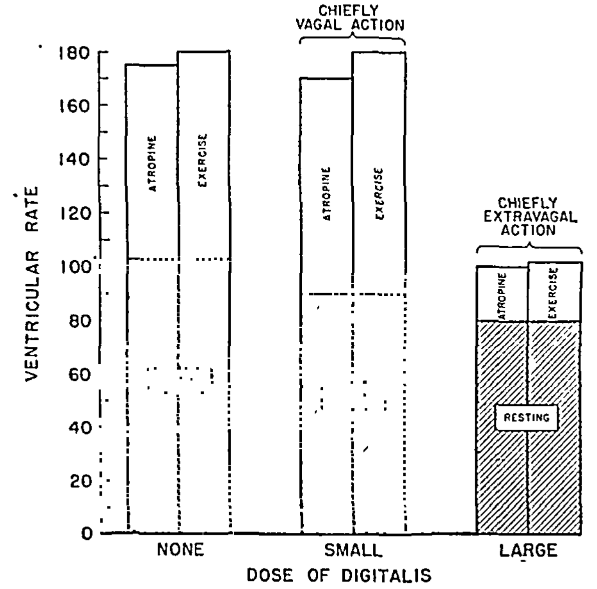

Fig. 4.—Effects of exercise and of atropine on the heart rate in 11 ambulant patients with heart failure and auricular fibrillation after small and large doses of digitalis.

Single Average Full Dose Method of Digitalization.—The human assay of digitoxin by the T wave shows that 1 mg. produces the same effect in man by oral administration as 1 Gm. of the Standard Digitalis Powder. The same relationship was found to apply to the effects in auricular fibrillation[8] (fig. 12). The fact that digitoxin is so potent and so well absorbed suggested the possibility of employing it in a single dose method of digitalization to replace the multiple dose methods employing digitalis leaf or the tincture.[9] Our results indicate that the most favorable routine technic for digitalizing patients is to administer 1.2 mg. of digitoxin at one time. This produces a high degree of digitalization in a period of about six to ten hours in the place of the twenty-four to forty-eight hour period required for the divided dose methods in which digitalis is used. One cannot use the digitalis leaf or the tincture by this method, because the equivalent amount of digitalis, namely 1.2 Gm., will cause nausea or vomiting by local action in about 10 to 20 per cent of the cases. The therapeutic effects are maintained in the majority of cases by a single daily dose of a tablet of 0.2 mg. The use of digitoxin in this way has greatly simplified the problem of digitalization.

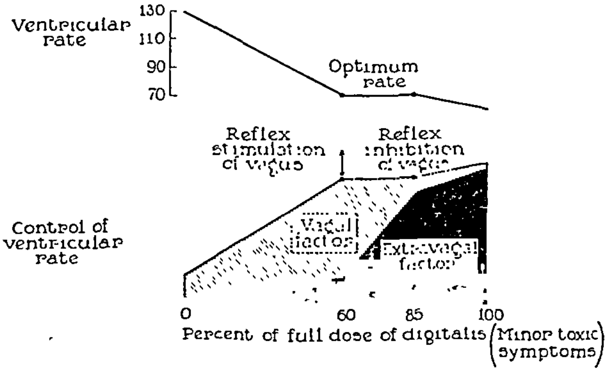
Ventricular rate
130
110
90
70
Optimum rate
Reflex stimulation of vagus
Reflex inhibition of vagus
Control of ventricular rate
Vagal factor
Extravagal factor
0
60
85
100
Percent of full dose of digitalis
(Minor toxic symptoms)

Fig. 5.—Schematic representation of the mechanism by which digitalis slows the ventricular rate in heart failure with auricular fibrillation.

Variations in Human Susceptibility to Digitalis.—Some difficulty has been encountered in gaining general acceptance of the idea that it is proper to use an average full digitalizing dose of digitoxin at one time in a routine manner. The argument is that patients vary too much, that the most tolerant ones will escape full digitalization and the most susceptible ones will be poisoned. It is indeed a fact that some patients need closer to 2 mg. to digitalize them fully. From our experience with more than 1,000 single dose digitalizations with 1.2 mg. a negligible number, about 2 out of 100, show nausea or vomiting. The safety of this method is therefore beyond question. In this connection I may call attention to a fact pointed out by Clark[10]

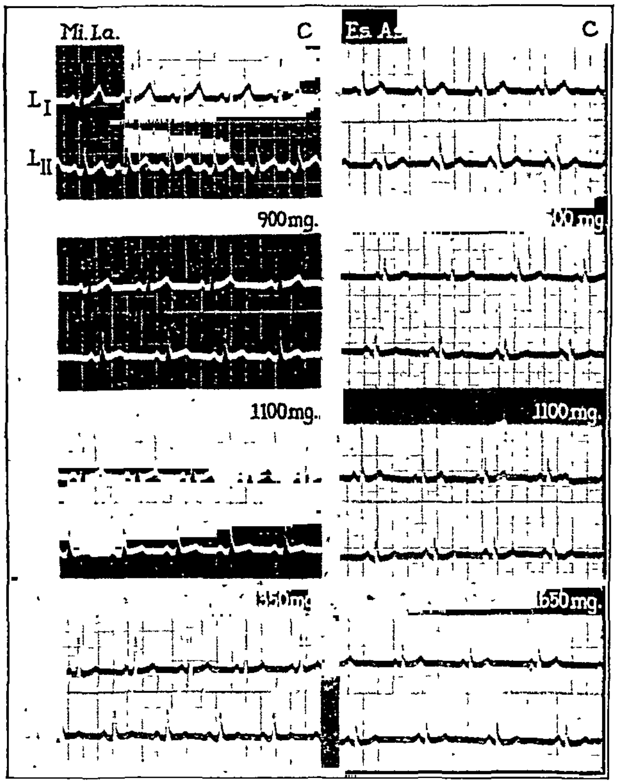

Fig. 6.—Selection of patients for human assay of digitalis. *C* is control before digitalis. Patient Es. As. is not suitable for assay because he can't distinguish 500 mg. from a dose more than three times as large by the T wave change. Patient Mi. La. is satisfactory for assay because the T waves become distinctly lower with dose increments of 25 per cent or less.

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[8] Gold, H.; Cattell, McK.; Modell, W.; Kwit, N. T.; Kramer, M. L., and Zahm, W.: J. Pharmacol. & Exper. Therap. **82**: 187 (Oct.) 1944.

[9] Gold, H.; Kwit, N. T.; Cattell, McK., and Travell, J.: Studies on Purified Digitalis Glycosides, J. A. M. A. **119**: 928 (July 18) 1942. Gold, Cattell, Modell, Kwit, Kramer and Zahm.[8]

[10] Clark, A. J.: Brit. M. J. **2**: *307 (Aug. 14) 1937.*

and others that digitalis action in animals is very uniform as drugs go. We recently prepared a distribution curve of digitalis action after oral administration in 86 patients (833 doses) based on the threshold doses causing a T wave change in the electrocardiogram[11] (fig. 12). The curve is very similar to that observed in the cat. Variation of patients' sensitivity from the approximate mean is not great. A dose ± 25 per cent of the mean includes about 70 per cent of the cases. Such variations in dosage are hardly detectable in clinical digitalization. A dose ± 50 per cent of the mean, which would hardly be expected to cause either serious underdigitalization or overdigitalization, includes more than 90 per cent of the cases. There is therefore a sound pharmacologic basis for the validity of the single average full dose method of digitalization. What was needed was a preparation of digitalis which could be given in that way without irritating the stomach. As I have already indicated, digitoxin meets that need because of two characteristics. It is so potent and so well absorbed that the approximate mean oral digitalizing dose involves only 1.2 mg. of glycoside, an amount too small to cause local gastrointestinal irritation, also an amount smaller than that required for any other glycoside in common use at the present time.

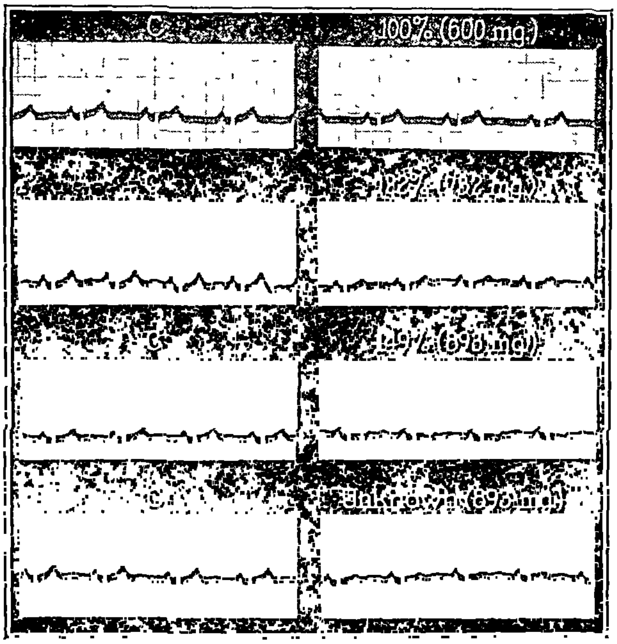

Fig. 7.—Method of digitalis assay in human beings. *C* is control, dose is given orally, and tracing is taken twenty-four hours later. The tracings are matched and ranked. Note that in this case the effect of the unknown falls between the effects of *732* and *893* mg. of the calibrating doses of the Standard digitalis.

Cumulation.—The term cumulation is widely applied to the action of the digitalis bodies. It is usually taken to refer to the fact that, if a particular dose which in itself causes little or no effect is given repeatedly, an effect will soon appear and increase in intensity as the dose is continued. There is considerable controversy concerning the precise nature of the phenomenon. We have made some observations which suggest that it represents gradual accumulation of the drug resulting from the fact that elimination falls behind. The behavior of the phenomenon resembles closely the cumulation of other drugs which are slowly excreted, such, for example, as the bromides. If one gives a dose of sodium bromide daily, say about 1 Gm., the bromide concentration of the blood begins to rise, going up to 5, 10, 20, 30, 40 mg. per hundred cubic centimeters. As the dose is continued, however, the cumulation soon comes to an end and the blood concentration continues at that level no matter how long the daily dose of bromide is continued. Cumulation is therefore a self-limiting process when a fixed daily dose is administered. The same is true of digitalis, although we do not determine it in terms of milligrams of drug but in terms of a pharmacologic effect.[12] Figure 13 illustrates this phenomenon. It shows the rate changes in a group of patients with auricular fibrillation. They received a single daily dose of 0.2 mg. of digitoxin. As the dose was repeated, the ventricular rate began to decline. It continued to fall for a period of about two to three weeks, after which it leveled off even though the dose was continued for eight or ten weeks longer. It is clear, therefore, that a fixed daily dose of digitalis produces cumulative effects which are self limiting in

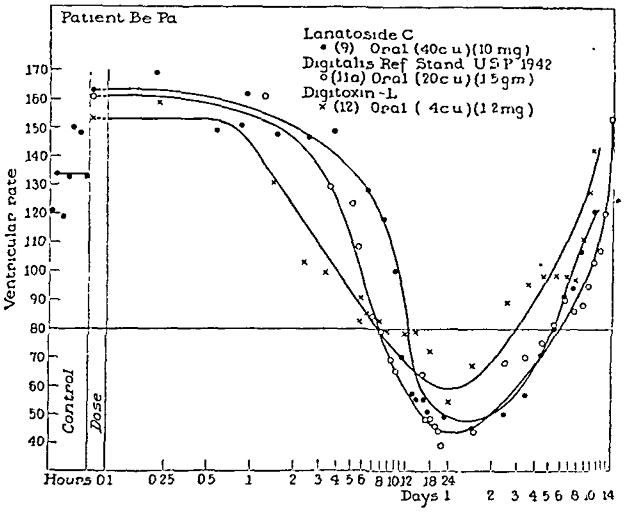

Fig. 8.—Absorption of several digitalis materials in patient with heart failure and auricular fibrillation. Note that substantially similar effects result from *4* cat units of digitoxin, *20* of digitalis leaf and *40* of lanatoside C, owing to differences in absorption.

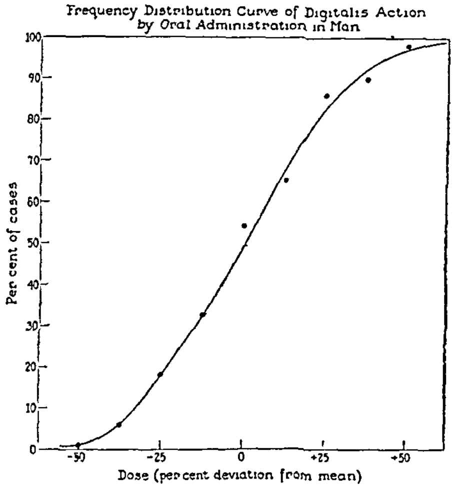

Fig. 9.—Note that the most tolerant patient with heart disease requires about three times as large a dose as the most susceptible one. Curve is based on T wave change seen twenty-four hours after the dose.

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[11] Gold, H.; Modell, W., and Otto, H. L.: Federation Proc. **4**: 119 (March) 1945.

[12] Gold, H., and DeGraff, A. C.: J. Clin. Investigation **6**: 613 (Feb.) 1929.

a manner similar to that of the bromides. When the dose was discontinued, the effects began to wear off and disappeared completely in about three weeks, resembling in this respect the effects of one large dose such as we have already seen in some of the previous charts.

The time it takes to reach the level varies with different drugs. In the case of quinidine, a fixed daily dose shows increasing effects during only the first three or four days. The effect then levels off, so that the continued use of that dose for months fails to produce any greater effects.

The practical importance of this phenomenon is clear enough. In the use of digitalis the patient receiving a fixed daily dose needs to be observed for from two to three weeks for signs of increasing intensity of action that may lead to poisoning. On the other hand, in the case of quinidine it is only a matter of a few days. If the fixed daily dose does not produce the desired therapeutic effects or poisoning within three or four days it is very unlikely that it will do either if continued for months unless the dose is increased, since the highest concentration on a fixed daily dose is reached within a few days in the case of this drug.

Comparison of Drugs.—I have described the method of assay of digitalis. In principle it means simply determining by how much one preparation is stronger than another, the standard preparation. Materials other than digitalis present the same problems. Let us see what has happened in the case of the cinchona alkaloids, which are of special interest at the present time to the National Research Council and the U. S. Pharmacopeia, having under consideration the substitution of synthetic or dihydroquinidine for quinidine of natural source. Frey[13] in some clinical observations in 1918 showed that quinidine is more effective than quinine in abolishing auricular fibrillation. Lewis and his collaborators[14] in 1921 made experiments in which the difference received a quantitative expression. Their conclusion that quinidine is five to ten times as effective as quinine in slowing the circus movement in the auricle has been widely quoted in the textbooks in the last twenty-five years. The implication is that all one needs to do is to give five to ten times as much in order to obtain the same results. Figure 14 is a chart which we constructed from some of their data. They found that as the dose of quinidine was increased the effect increased, but at about 0.8 Gm. a ceiling was reached. If two compounds are compared at the dosage level of 0.8 Gm. or larger, and the effects are the same, one may still be many times as potent as the other, but the difference escapes detection because, at the ceiling effect, differences cannot be revealed. And it is at this very level of dosage, namely 0.8 Gm., that Lewis and his collaborators compared these drugs.

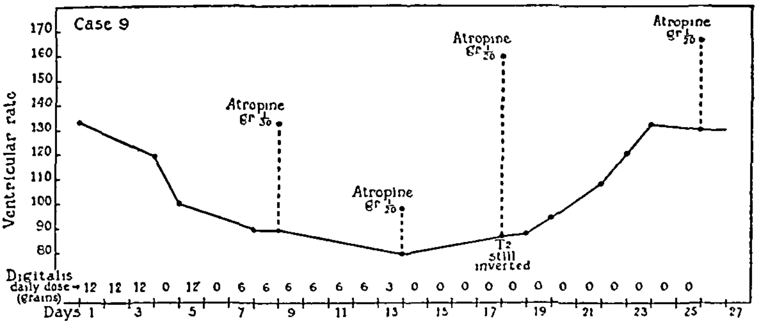

Fig 10.—Effect of atropine on the cardiac slowing caused by digitalis in patient with auricular fibrillation and heart failure varies with the degree of digitalization

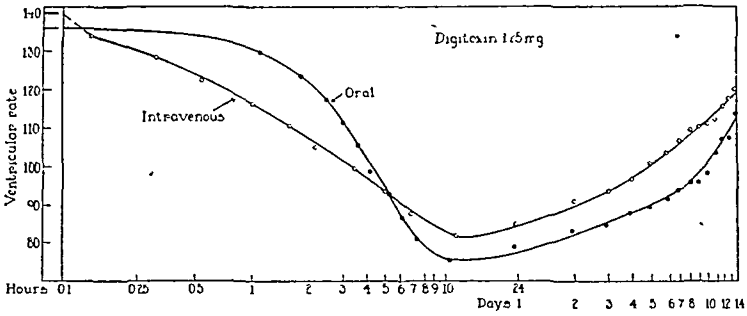

Fig 11.—Comparison of digitoxin by oral administration and intravenous injection in patients with heart failure and auricular fibrillation. Time is charted in hours after the dose. Curves represent the average results with 9 (oral) and 14 (intravenous) patients

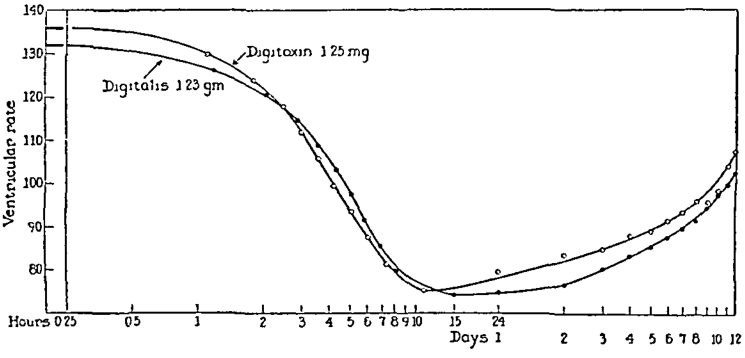

Fig 12.—Comparison of oral digitoxin and digitalis in 9 patients with heart failure and auricular fibrillation. The drug was given in one dose. Time is charted in hours after the dose. Note the similarity in speed of absorption and duration of action of digitalis and digitoxin.

Dosage Response Curve.—We have repeated these studies[15] with dosage response curves. Out of the preliminary experiments a somewhat different story is beginning to emerge (figs. 15 and 16). Indeed, the results confirm the observation that quinidine is more effective than quinine, gram for gram. It will be noted that as the dose is increased the effect in the case of each drug increases, and that in each case a ceiling effect is reached. But it will also be noted that the ceiling is about twice as high in the case of quinidine as for quinine. Therefore, in the range of a low grade effect, the two drugs are interchangeable. In case the therapeutic effect can be secured by an action equal to circus slowing in degrees up to 20 per cent, either drug will produce it if one uses two to three times as much quinine, but if stronger actions are necessary in the range shown by circus slowing up to 40 per cent, the two drugs are no longer interchangeable. No matter how much quinine is given it cannot match the effect of quinidine in this range. It cannot exceed its own ceiling. The case of ephedrine and epinephrine on the blood pressure would yield a similar set of results.

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[13] Frey, W.: Berl. klin Wchnschr 55: 450, 1918

[14] Lewis, T.: Drury, A. N; Wedd, A. M, and Iliescu, C C: Heart 9: 207 (April) 1922

[15] Gold, H; Modell, W; Otto, H. L, and Hanlon, L. W.: Federation Proc. 5: 179 (Feb) 1946.

I wish to call attention to the fact that the comparison of drugs is a pharmacologic game with a set of rules which must be observed: The results do not come out right if the rules are ignored. The dosage response curve, which is the only means of securing information regarding the sensitive range of the physiologic measuring device, is not commonly established in the usual comparisons of drugs on the human subject.

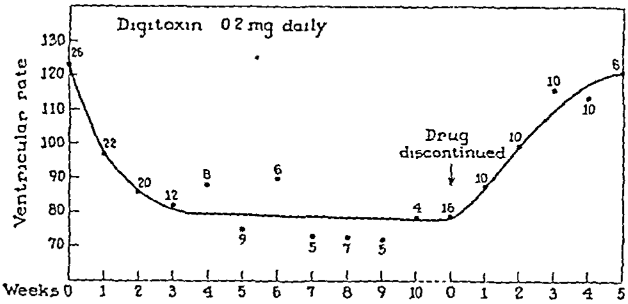

Fig. 13.—Cumulation of digitoxin in ambulant patients with heart failure and auricular fibrillation.

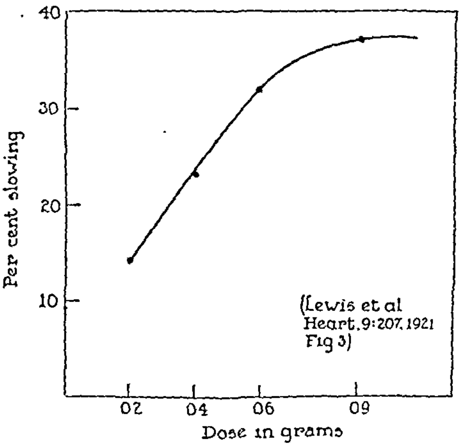

Fig. 14.—Effect of quinidine sulfate on rate of circus movement in patient with auricular fibrillation.

Dosage.—We might now turn to another matter concerning the use of cardiac drugs, namely the principles of dosage. The case of digitalis, quinidine and the mercurial diuretics may be used to illustrate my points, although it goes without saying that basic principles of dosage which operate in the case of these might well be expected to find application to therapeutics in general.

Average Dose.—I have already discussed the use of digitalis in the form of an average digitalizing dose given at one time. The term average dose is freely used in the clinical literature, but there is clearly need for more attention to its full meaning. It is one of the most useful units of dosage, for it represents the quantity of the drug with which a therapeutic procedure may be started. Clearly that amount cannot be expected to produce the therapeutic end point in all patients, because the susceptibility of patients varies. The utility of the average dose will differ from drug to drug. Its utility in the case of any particular drug can be determined by a study of the frequency distribution curve. If the drug in question happens to be one in which the curve is fairly steep, which means that individuals do not show very wide differences in susceptibility, the average dose is extremely valuable; for in that case the average dose will exert the specific effect or something very close to it in the large majority of people. On the other hand, if the frequency distribution curve is fairly flat it indicates that there are relatively wide differences in susceptibility from individual to individual and that satisfactory effects are not likely to be obtained from the average dose. I have pointed out how the approximate average dose is expected to behave in the case of full digitalization. That dose is based on the whole range of cardiac patients, ambulant, bed patients, those who are in moderate failure and those who are in advanced failure. Disappointments have been voiced over the fact that this dose has failed to produce the desired effects in a limited range of experiences.[16] Isn't that precisely what should be expected from any average dose? Is it to be expected that it will fit the individual case any better than an average sized hat fits any particular head?

Perhaps our experience with the average daily maintenance dose of digitalis will help to clear the point (fig. 17). This chart shows the effect of 0.2 Gm. of digitalis given daily to 40 ambulant patients with auricular fibrillation. The desired effect is to maintain a rate of 70 a minute. When this dose is given to a large group of patients for a period of four weeks the rate is rarely exactly 70 a minute for any given

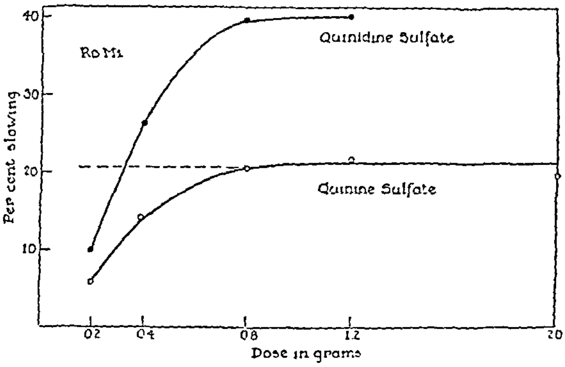

Fig. 15.—Effect on rate of circus movement in patient with auricular fibrillation. The dose of drug was given on an empty stomach and electrocardiograms were taken at two hour intervals for the greatest effect; it usually occurred in two to four hours after the dose. Interval between doses was two to three days.

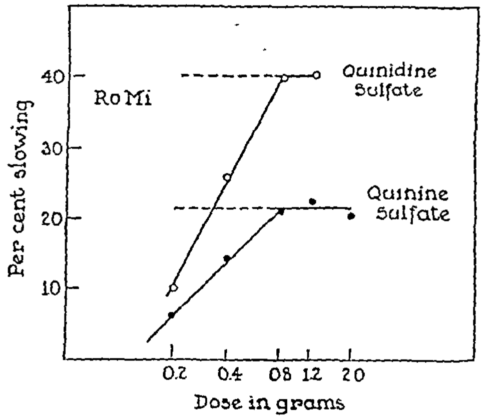

Fig. 16.—Effect on rate of circus movement in patient with auricular fibrillation. Same as figure 15 but charted in log of dose.

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[16] DeGraff, A. C., and Batterman, R. C.: M. Clin. North America 26: 929 (May) 1942. Stewart, H. J.: New York State J. Med. 45: 1676 (Aug. 1) 1945.

patient, but a result sufficiently close to that is obtained in about 70 per cent of the group, namely a rate ranging between 60 and 90. The rest are either too tolerant and maintain rates up to 100 or faster or are so susceptible as to attain the rates of 40 or slower. That does not erase the importance of an average dose. It is still one of the most useful values in the solution of the problem of dosage. The most useful average dose, from the clinical standpoint, is one which is likely to exert an effect close enough to the desired effect, in a high proportion of patients and with reasonable freedom from toxicity. By these criteria many drugs may fail to qualify, for individual differences in susceptibility may produce too wide a scatter. Unfortunately, few drugs have been properly explored for the true position of their average dose.

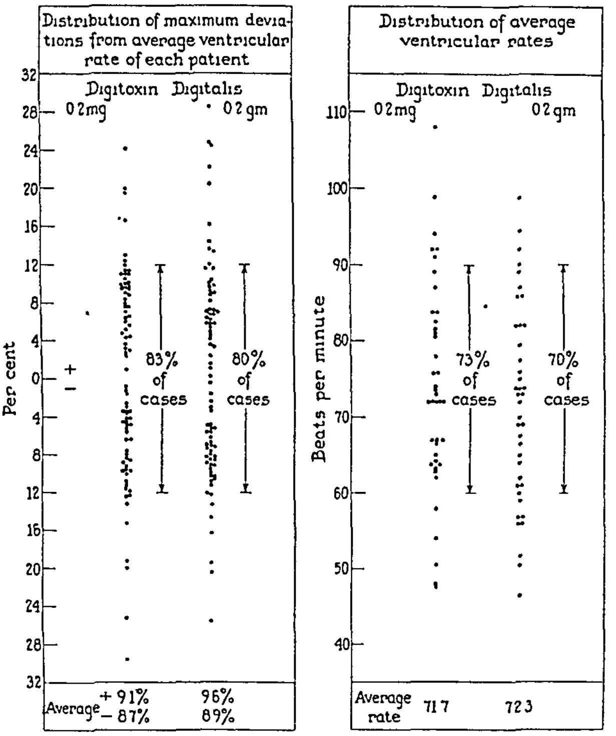

Fig. 17.—Comparison of digitoxin with digitalis in human beings (maintenance doses).

Dose for Particular Individuals.—Let us now turn from the notion of the average dose to the dose for the particular case. No one would challenge the simple statement that the optimum dose is the one which produces the maximum therapeutic effect without toxic effects. It is in the method of applying this principle that all the trouble arises. Plans of dosage are too often devised without sufficient regard to the pharmacology of the agent, its rate of absorption, cumulation and persistence of action.

Quinidine.—The case of quinidine is a good example. It is the most important agent we possess for abolishing many disorders of rhythm and for preventing their recurrence. Experiments show that its maximum absorption takes about two hours, so that the peak effect may be expected at that time and that most of the effect wears off in less than twenty-four hours. We have also found in experiments on man[17] that a fixed daily dose shows cumulation for only three or four days, unlike digitalis in which a fixed daily dose may show cumulation over a period of two or three weeks. This signifies that any daily dosage level of quinidine which fails to produce the desired effect in three or four days is likely to fail to do so no matter how long it is continued. I often encounter patients taking a small dose of quinidine for weeks on end without the slightest effect on the abnormal rhythm. The failure could have been predicted after the third or fourth day. The way of insuring success is to base the system on the facts concerning the behavior of quinidine which I have just mentioned. The method we apply in a case in which there is no urgency is to give 5 grains (0.32 Gm.) of quinidine three times daily, or 15 grains (1 Gm.) a day for four days. If the abnormal rhythm is not controlled, the dose is increased to 20 grains (1.23 Gm.) daily for four days. One continues to increase the dose by 5 grains daily every four days until a daily level is reached at which the abnormal rhythm goes or until minor toxic effects preclude its further use. If there is great urgency, as in some cases of ventricular tachycardia, one builds the concentration more rapidly on the peak effect of each dose. In such a case we use 5 or 10 grains every two hours. The total dose in the day may be small or large, but even if large it is without danger because the method has its own protective device, for the dose is continued only until the therapeutic effects occur or minor toxic effects necessitate interruption. By this method failures are few.

Mercurial Diuretics.—The tendency to overlook the principles of dosage which have gone far in establishing sound and effective digitalis therapy is particularly noteworthy in the current application of the mercurial diuretics in the treatment of heart failure. These materials, mercupurin, salyrgan with theophylline and mercuhydrin, represent one of the most noteworthy advances in cardiac therapy in the last twenty-five years. Unfortunately only a small part of the potentialities of these drugs is exploited, since they are commonly reserved only for cases in which there is frank edema or pulmonary rales occur. It deserves emphasis that, in heart failure, edema may be present in the lungs and other tissues long before the usual clinical signs, namely

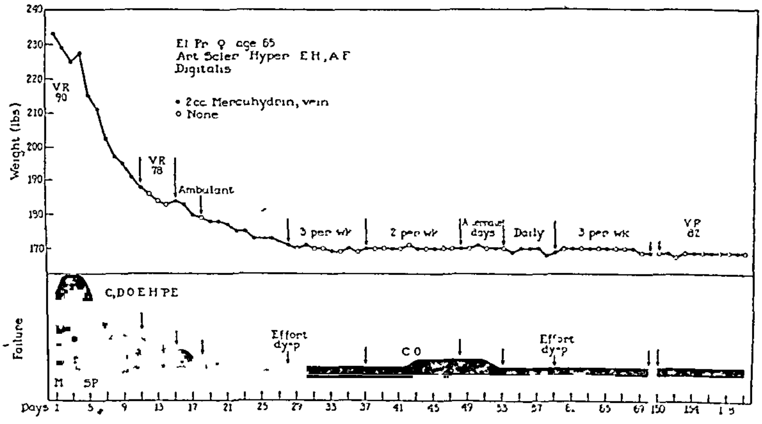

Fig. 18.—Illustration of method of producing the full effects and then establishing the maintenance dose with the mercurial diuretic in the patient with heart failure. Letters refer to symptoms (*C* cough, *D* dyspnea, *O* orthopnea, *E* edema, *H* hydrothorax, *P E*. pulmonary edema).

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[17] Gold, H.; Otto, H. L., and Satchwell, H.: Am. Heart J. 9:219 (Dec.) 1933.

rales and pitting of the legs, that shortness of breath on effort, cough and orthopnea are usually much earlier signs. Patients with heart disease and these symptoms make up the largest group of potential beneficiaries of the mercurial diuretics. Furthermore, the common system of dosage calls for an injection not more often than once in four to seven days, with discontinuance of the drug until edema reaccumulates. It reminds one of the therapy with digitalis around the turn of the century; a course of treatment was given and repeated when signs of failure reappeared. The notion of the maintenance dose to prevent recurrence of failure is of relatively recent vintage. The very mention of a maintenance dose in the case of the mercurial diuretics sometimes gives rise to all the stir and alarm of a new idea. As to dosage, one should note that the organic mercurials are usually eliminated completely or almost so in less than twenty-four hours. A dose may therefore be repeated every day with safety, and, indeed, in cases of advanced failure the results of the daily dose to abolish the failure, and the maintenance dose at suitable intervals to prevent its recurrence, provide us with one of the most dramatic aspects of modern cardiac therapy.[18]

TABLE 1.—*Human Assay of Digitalis*

	Calibration with U. S. P. Reference Digitalis						Unknown Preparation		Mg. of Reference and Unknown Which Produce Equal Effect	Ratio of Doses (%)
	100%		122%		149%					
Case	Mg.	Effect	Mg.	Effect	Mg.	Effect	Mg.	Effect		
Sc. Go.	600	1+ 1+	732	2+ 2+	893	3+ 3+	893	2+	732 R = 893 U	122
Me. Ro.	400	1+	488	2+	600	4+	600	3+	544 R = 600 U	110
Da. St.	600	0	732	1+	893	2+	893	1+	732 R = 893 U	122
Ye. Sh.	270	1+	336	1+	400	3+	400	2+	365 R = 400 U	110
Id. Ru.	600	0	732	2+	893	3+	893	1+	666 R = 893 U	134
Ge. Bo.	600	0	732	3+	893	2+	893	1+	666 R = 893 U	134

100 mg. standard equals 122 mg. unknown.

Average.................. 122
S. E. .... ±3.6%

Figure 18 shows how this system may be put into operation. This patient, who was in progressive failure for several years, was now in what appeared to be the very last stages; nearly moribund, gasping for breath, edema from the toes to the neck, the liver to the umbilicus, hydrothorax and ascites, cold and clammy sweat. She had received all the necessary drugs, namely digitalis and mercupurin. She was digitalized to the point of persistent vomiting. She had received several infrequent doses of mercupurin, which seemed to increase the urine output but made the symptoms worse, as a result of which it was discontinued. When she failed to rally she received the last rites. It required much persuasion to secure the privilege of subjecting this patient to a daily dose of the mercurial when doom seemed so certain. From the character of the symptoms, doom seemed no less certain in the first five days of treatment. The only encouragement came from the daily body weight. It began to decline from the very start. There was a long lag in the symptoms; they showed distinct improvement only after a loss of nearly 20 pounds (9 Kg.). When the daily dose was interrupted the improvement was halted. In seventeen days the patient was ambulant and nearly free from symptoms. She had lost about 65 pounds (29.5 Kg.) to reach her "dry weight." The method of trial and error established the maintenance dose, namely the dose which served to maintain the "dry weight." It turned out to be one dose three times a week. At the time of this chart it had been in use for about four months; it is now more than a year. It is noteworthy that in the case of the mercurial diuretics an accurate chart of the body weight may be put to substantially the same use as the heart rate for the patient with auricular fibrillation treated with digitalis, or the fever chart in the case of infection treated with penicillin.

TABLE 2.—*Reassays of Digitalis Preparations by Human Method*

Preparation	Date of Assay	Potency
Ref. 1942....................................	February 1943 August 1943 September 1943	104.5 102.2 107.7
H. A. No. 9..................................	April 1943 January 1944	107.1 102.4
Dl. capsules..................................	September 1941	77.8
Dl. tablets....................................	October 1941	82.0
Dl. tincture..................................	October 1941	86.9
Dl. second tr.................................	January 1942	77.5

TABLE 3.—*Potency of Digitalis Materials by Different Methods of Assay*

Preparation	U. S. P. Unit (Cat Method)	U. S. P. Units (Human Method)
1. Digitoxin..............................	1	5.55
2. Gitalin................................	1	1.81
3. Indian urginin..........................	1	0.51
4. Lanatoside C...........................	1	0.50
5. Digitalis leaf..........................	1	0.56
6. Digitalis leaf..........................	1	0.69
7. Tincture digitalis......................	1	0.76
8. U. S. P. XI reference digitalis........	1	0.80
9. Digitalis tablets.......................	1	0.87
10. H. A. No. 9 leaf.......................	1	0.87
11. Digitalis leaf.........................	1	0.95
12. Digitalis tablets......................	1	0.97
13. Digitalis leaf.........................	1	1.46

1300 York Avenue, New York 21.

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[18] 18. Gold, H.: New York State J. Med. 46: 62 (Jan. 1) 1946.

Smoke.—There exists a direct and highly significant relationship between air pollution and infectious diseases of the respiratory tract in man. This hazard involves principally the men living in the most heavily industrialized city districts and breathing its polluted air. In its overall aspects this respiratory disease situation is probably fully comparable in severity with the enteric disease picture so completely altered long ago by city water purification.—Mills, Clarence A.: The Relationship of Smoke to Infections of the Respiratory System, *Cincinnati Journal of Medicine*, September 1946.

MODERN CONCEPT OF THE NEUROSES

KARL M. BOWMAN, M.D.
San Francisco

It is conservatively estimated that 50 per cent of all cases seen in general medical clinics are primarily psychiatric problems, most of which would be labeled neuroses. A prominent cardiologist has stated that over half the cases referred to him are cardiac neuroses and not organic heart disease. If, then, the neuroses are seen so frequently in all fields of medicine, it seems desirable to present a paper on the subject before this audience.

There is no commonly accepted definition of the term neurosis. Some of the older writers differentiated carefully between the neuroses, which were considered organic diseases with a definite physical basis, and psychoneuroses, which were thought to be of mixed origin with the psychologic factors regarded as the more important ones. Beard described neurasthenia as due to an organic nervous exhaustion.

Freud originally separated the true neuroses, which he felt were physiologic in origin. In his earlier writings he described neurasthenia as follows: "Pure neurasthenia, which after it has been differentiated from anxiety-neurosis presents a monotonous clinical picture (exhaustion, sense of pressure on the head, flatulent dyspepsia, constipation, spinal paraesthesias, sexual weakness, etc.) admits of only two specific aetiological factors, excessive onanism and spontaneous emission. . . ."

Modern medical practice makes the use of the terms neurosis and psychoneurosis almost interchangeable. There are, however, numerous papers which use the term neurosis in a more organic fashion. For example, a recent article by Bennett devotes several pages to what are called the vasomotor neuroses. Such conditions as erythromelalgia, causalgia and scleroderma are included. Until more is known about the etiology of such diseases, the term neurosis will continue to be used for clear-cut organic syndromes and for borderline conditions as well as for those of psychologic origin. In the present paper the terms neurosis and psychoneurosis will be used interchangeably.

Time does not permit discussing the historical development of the various concepts of the neuroses. Two illustrations may be of interest in showing that the modern concept of sexual repression as a factor in the production of hysteria was well recognized by the ancient Greeks. Over 2,000 years ago Plato wrote: "The matrix is an animal that longs to generate children. When it remains barren for a long time after puberty it feels it difficult to bear, it feels wroth, it goes about the whole body closing the issues for the air, stopping the respiration, putting the body into extreme dangers, and occasioning various diseases, until desire and love, bringing man and woman together, make a fruit and gather it as from a tree."

Hippocrates thought that temperament depended on the four humors—blood, black bile, yellow bile and phlegm—and that the corresponding temperaments were sanguine, melancholic, choleric and phlegmatic. One of his women patients was thought to have hysteria due to "a dislocation of the humors." He recommended that she be treated by "indulging the intentions of nature and lighting the torch of Hymen."

Throughout history one finds various descriptions and interpretations of the psychoneuroses. The religious point of view held sway for a great deal of this time, and persons were regarded either as great religious leaders or as possessed of the devil, depending on the particular conditions that prevailed at that time. During the witchcraft scares of the sixteenth century a spot of hysterical anesthesia was known as the witch's claw and was supposed to indicate the spot where the devil had touched the person in sealing the compact whereby he sold his soul to the devil. It is only during the last one hundred years that there has been a general recognition of the neuroses as a form of sickness belonging to the field of medicine. Even today there are those who deny that such is the case and feel that these problems belong to religion, education, psychology or some other field.

Starting with the work of Charcot, Janet, Breuer and Freud, and followed shortly after with the work of Adolf Meyer, there has been built gradually a large amount of scientific knowledge concerning these disorders. Even today there is no common agreement among members of the medical profession or even among psychiatrists concerning many of the formulations. At present, however, the generally accepted approach is the biologic approach. Man is regarded as a highly complex and constantly changing organism, adjusting to a highly complex and constantly changing environment. He can be studied and understood by all the methods employed in studying other organisms. He can only be understood as a social being who lives in a society and a culture which determine his attitudes and behavior. His capacities and limitations are determined by heredity, and as a being of living protoplasm he is affected by the physical factors of his environment. There are, therefore, an almost limitless number of variables which determine his behavior and which may produce maladjustment.

Mental disease, like all disease, may be regarded as a failure of the organism to adjust adequately to its environment. All disease is an indication that the organism is incapable of adapting itself to the demands of life. Mental disease is not something for which one is to be praised or condemned; it is a medical, not a moral, problem.

There is a great variety of mental disorders, each with different symptoms and causes. Some are benign; others are malignant. The more serious mental disorders are called psychoses. The terms minor psychosis, neurosis or psychoneurosis are given to a group of milder mental disorders. Such a descriptive term as minor psychosis is, in my opinion, useful and does give the correct concept of the nature of a psychoneurosis. If one attempts to describe a psychoneurosis in terms of the reaction or behavior of the patient, one is at once involved in difficulties in differentiating between a so-called true psychoneurosis and a psychoneurotic reaction as a part or symptom of some other disease.

Early brain tumors, for example, are often diagnosed as psychoneurosis or hysteria. The reason for this is that certain symptoms of a psychoneurotic type are present. At the time of examination no organic or neurologic signs can be detected. By a process of exclusion the patient is labeled psychoneurotic. This

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diagnosis of psychoneurosis on the basis of no apparent organic cause is a common practice open to considerable criticism. A diagnosis of psychoneurosis should be on a positive basis and not merely on a negative one. The fact that no organic sign can be detected does not mean that one is not present which is the essential cause of the patient's reactions. It must be realized that in the early stages of many serious organic brain diseases such as general paresis, multiple sclerosis and brain tumor, the physician may encounter a syndrome which appears to be that of a psychoneurosis. It has also been shown that with dietary deficiency, especially of vitamin B_1, a psychoneurotic syndrome may be produced.

The first question is, should these conditions be labeled psychoneurosis or should use of the term be restricted to those manifestations without any organic basis? Assuming that one wishes to restrict it to those of psychogenic origin, one is immediately confronted with the so-called mixed picture. This question comes up particularly in cases of delayed recovery. Work carried on at the Langley Porter Clinic by Ruesch and his associates indicates that delay in recovery from head injury, thyroidectomy and ulcer is often determined not by the severity of the disease itself but by the psychologic attitude of the patient.

Sometimes the term "nervous disorder" is heard. It is used in two senses: first, to indicate a neurologic disorder, such as multiple sclerosis, and second, to indicate a mild type of mental disorder. Families will say "There is nothing wrong with him mentally, he is just nervous." There are those who call the neuroses "nervous disorders or a nervous breakdown" and insist they are not mental disorders.

Janet once said that the only difference between the neuroses and the psychoses was how much money a patient had. If he had plenty of money he remained at home with private nurses and was said to have a nervous breakdown. If he had no money he was sent (to quote Janet) to "a lunatic asylum" and was said to have a psychosis.

There is no satisfactory simple definition of a psychoneurosis. The symptoms are extremely variable, and a large percentage of them are merely exaggerations of responses which all normal persons have. In fact, one attempt at defining psychoneurosis is to say that a person is a psychoneurotic, who habitually behaves in a psychoneurotic fashion. All persons at times behave this way. This concept would indicate that there is no fundamental difference between the psychoneurotic and the normal person. The difference is quantitative rather than qualitative.

Another way of dealing with the problem is to speak of the psychoneurotic syndrome, or, following Adolf Meyer's concept, to speak of the psychoneurotic reaction type. Such a method avoids considering the psychoneuroses as clear-cut disease entities. It rather regards them as a series of varying types of reaction brought about by multiple causative factors which vary from case to case. For those who consider the psychoneuroses as disease entities, there is no question of a single disease, but rather of a large number of diseases with different symptomatology and different causation. Thus neurasthenia and hysteria have for a long time been regarded as fairly clean-cut entities with a specific set of symptoms, and, by many, with clear-cut but different etiologies. The modern concepts of psychiatry have attempted to solve this dilemma by doing away with the dichotomy of mind and body. Psyche and soma, or mind and body, are considered merely as partial aspects of the total personality. It is even held that there is no such thing as a purely psychologic or a purely physiologic process. This has led to some of the present concepts often referred to under psychosomatic medicine; formulations which attempt to explain physical symptoms on an emotional basis. There has been a general inclination to think in terms of a single causation. This has varied from the concept of sexual frustration to the most recent formulation of anxiety.

Based on war experiences, there has developed an over-simplified formulation of the psychoneuroses. Under the new Army classification of psychoneurotic disorders a whole series of reactions are given, but the essential factor stressed in all cases is that they arise in persons already sensitized or conditioned by repressed childhood experiences. It is felt that a return of the original symptomatology may be precipitated by any acute emotional trauma. Anxiety is considered the core of all psychoneurotic reactions. The person is aware of this anxiety, feels threatened by it and endeavors to handle it by various methods. The conversion reaction or conversion hysteria results in the conversion of anxiety into functions of the organs or parts of the body. An attempt is made to differentiate this from what are called somatization reactions. In these latter conditions it is felt that the anxiety becomes attached to visceral organs through the autonomic nervous system, whereas conversion hysteria is thought of as a symbolic reaction affecting organs under conscious control.

The so-called organ neuroses as well as many conditions studied under psychosomatic medicine fall into this somatization group. Against all attempts to simplify the neuroses and bring in some single common factor, there is the view which probably comes principally from Adolf Meyer. This view holds that there is a plurality of causes, and that each case is highly individual and must, therefore, be studied not in the light of some preconceived concept of a simple etiology, but rather in the light of the entire life history of the patient.

There is much controversy with regard to the role of heredity and constitutional factors in causing neuroses. Some consider constitution the all important cause and feel that psychoneurotics are born, not made. Others regard constitution as of little importance. Most persons think that Freud belonged to this latter group. You may be interested in a quotation from his paper, "Heredity and the Aetiology of the Neuroses."

"As for the aetiology of the neuroses, I think we should recognize that the various aetiological factors, differing in their importance and in the way in which they are related to the effect they produce, may be arranged theoretically in three classes: (1) *conditions* that are indispensable for the production of the disease in question, but which are of a universal nature and occur as well in the aetiology of many other diseases. (2) *Concurrent causes* that share with the conditions in group (1) the characteristic of entering into the causation of other diseases as well as into that of the disease in question, but which are not indispensable for the production of the latter disease. (3) Specific causes just as indispensable as the first conditions but appearing only in the aetiology of the disease for which they are specific.

"Now, in the pathogenesis of the major neuroses heredity plays the part of a *condition,* potent in all cases and even indispensable in the majority of them. It cannot do without the assistance of the specific causes; but the importance of hereditary predisposition is demonstrated by the fact that the same specific causes operating on a sound person would produce no manifest pathological effect, while its presence in a predisposed person will precipitate a neurosis, the development of which will in intensity and extent be proportional to the degree of hereditary predisposition."

Another classification concerning which there is considerable difference of opinion is the so-called character neurosis. Attempts to differentiate character neurosis from psychopathic personality on the one hand and psychoneurosis on the other have led to many difficulties. The concept back of the term character neurosis is that it is primarily a personality deviation caused by conflicts and difficulties of adjustment during the early years of life. Some would class it under the psychoneuroses. It is apparent, therefore, that there is a wide divergence of opinion as to what is to be included under the term neurosis or psychoneurosis, and that even these two terms are not always used interchangeably.

CONCLUSIONS

The term neurosis is used to describe certain organic diseases involving the nervous system in which there may be no mental symptoms, to describe certain conditions of psychologic origin and, finally, to describe some mixed pictures. The term is commonly used synonymously with the words psychoneurosis, nervousness and nervous breakdown. Under the general use of this term are included several conditions which have different symptomatologies and different etiologies. One commonly distinguishes between a psychoneurosis and a psychoneurotic reaction. The true psychoneurosis is generally held to be on the basis of mental conflict, which is more or less unconscious and repressed. It is generally agreed that there is a variable constitutional factor which is large in some cases and small in others. Psychoneurosis is a method of solving life's problems; it is inferior, inadequate and unhealthy, but it is an attempt at their solution.

The psychoneurotic reactions are generally considered to be reactions with similar symptoms, which are either based on simple organic factors like vitamin B_1 deficiency, anemia or some similar process or are so brief and transitory that they are not felt to be true psychoneuroses. Combat fatigue and operational fatigue are held by many to belong to this group, since it is felt that they commonly arise in persons of fairly good constitution and if properly handled are brief and transitory reactions. The symptoms in the true psychoneuroses are extremely varied; there is commonly a mood disorder, which is usually anxiety or depression and feelings of inadequacy. The intellectual functions are seldom involved. Delusions and hallucinations seldom occur. The patient usually has some degree of insight in that he realizes that he is sick and needs help. The psychoneuroses must be differentiated on the one hand from the psychoses or more severe types of mental disorders, and on the other hand from psychopathic personalities.

The psychoses are the more serious mental disorders and correspond to what the layman calls insanity. It is a debatable question whether a psychoneurosis goes on to develop into a psychosis. The classical argument between Janet and Jung may be mentioned in this connection. Janet insisted that certain psychoneuroses went on to develop into dementia precox. Jung denied this but said that certain cases of dementia precox might start with psychoneurotic symptoms. Many organic diseases such as general paresis, cerebral arteriosclerosis and brain tumor may start with a psychoneurotic syndrome.

At the other end of the scale, it is often difficult to differentiate between what is called a character neurosis and what is known as a psychopathic personality. The concept of psychopathic personalities implies a greater degree of constitutional involvement, a character defect which is innate. The concept of character neurosis implies a deviation which has developed in relation to conditioning experiences and mental conflict. There is much controversy as to the cause of the true psychoneuroses. It is almost universally agreed that there is a constitutional factor of varying degree. There is no general agreement as to whether this is an inherited trait. The precipitating cause seems to be a mental conflict which is at a more or less unconscious level. This usually occurs in a person who has had many childhood conflicts and have given evidence of definite inadequacy and difficulty in adjustment throughout life. Organic factors of varying types may contribute to the picture. Psychoneurosis, then, should be regarded as of mixed origin and not due to a single cause. Each case should be thought of as individual in origin, and its factors must be worked out on this basis.

Diagnosis should not be made purely on the basis of the symptomatology presented. It must be remembered that early cases of organic brain disease may present a psychoneurotic syndrome long before there are any positive neurologic observations. Therefore, their absence does not make the diagnosis of psychoneurosis certain. The diagnosis should be made on a positive basis, not by exclusion. As said before, the disease commonly presents a mixed picture and the constitutional, physiologic, and psychologic factors must all be evaluated in arriving at a correct diagnosis.

Treatment should be based on securing the maximum results in the shortest time with the least amount of suffering for the patient. Time does not permit a discussion of all the different technics of psychotherapy. The present attitude of psychiatry is for shorter technics of treatment, and there are many of the psychoanalytic school who no longer argue that most patients require the hour a day, five days a week, treatment for one to two years. It has been clearly demonstrated that good clinical results can be achieved by briefer technics. One may employ hypnosis, drugs or a simple, frank discussion with the patient as a means of bringing up the fundamental problems. Whether a man is ever completely cured is an academic question which may be raised in all fields of medicine and which does not merit lengthy consideration.

In order to prevent the psychoneuroses, one would theoretically start with eugenics, but knowledge in this field is so limited that one is unable to offer much of value. From a practical point of view, the most important factors seem to be the family relationships and the culture in which one lives. Attention should be given to the development of healthier attitudes on the part of parents, and a healthier social attitude toward neuroses should be encouraged.

RECOGNITION AND TREATMENT OF EARLY VITAMIN DEFICIENCY STATES

DAVID CAYER, M.D.
Winston-Salem, N. C.

The significant role of adequate nutrition in the maintenance of health and the treatment of disease has become increasingly evident in recent years. Elaborate educational programs and costly advertising campaigns have made the public diet and vitamin conscious. Numerous surveys of eating habits and food consumption have been made in various sections of the country and have shown a high prevalence of diets which do not meet the recommended daily allowances of the National Research Council. The problems of postwar economic adjustment and the rising cost of living are increasing the food problems of the large group of wage earners with fixed incomes. (Reports from abroad tell of a famine of almost worldwide proportions and unparalleled severity, and raise the question as to how much of this country's supply of grain and other food essentials can be shipped abroad without seriously reducing the American diet.)

TABLE 1.—*Factors Resulting in Avitaminosis*

Inadequate Intake
1. Anorexia, nausea, and vomiting due to gastrointestinal disorders, congestive failure, pregnancy or infectious disease
2. Self-imposed or therapeutic restriction, psychoneurosis, chronic alcoholism, fads, ignorance, poverty
3. Improper cooking and processing

Poor Absorption
1. Gastrointestinal disease, loss of mucosal integrity, hypermotility, fistulas, obstructive jaundice, Wangensteen suction
2. Vitamin deficiency, sprue syndrome

Decreased Utilization
1. Hepatic disease
2. Malignant disorders

Increased Excretion
1. Lactation
2. Parenteral fluids

Destruction
1. Alkalis, sulfonamide compounds, arsenic

Increased Requirements
1. Fever, infection, pregnancy
2. Metabolic disorders (diabetes, hyperthyroidism)
3 High carbohydrate diet, large doses of a single purified vitamin

There seems to be little likelihood that the severe deficiency diseases seen in the past years will reappear. The progressive decrease in the number of patients exhibiting beriberi, scurvy and pellagra is familiar to all and can be verified by statistics from any state board of health. This decreasing frequency of frank deficiency states has focused attention on early or "subclinical" avitaminosis. It would seem reasonable to assume that all grades of vitamin deficiencies exist, from those exhibiting the characteristic clinical features of beriberi, scurvy and pellagra to those totally unrecognizable by present diagnostic methods. The chief concern of physicians at present is with this latter group of patients, who have suggestive symptoms but no tissue changes recognizable by physical examination. Since the deficiencies most commonly seen are those of the B complex, this discussion will emphasize the recognition and treatment of early deficiencies of the B complex.

DIAGNOSIS

Recognition of Factors Predisposing to Deficiency States.—Since avitaminosis may be produced by several mechanisms (table 1), it is important first to determine by history, careful physical examination and accessory studies whether or not there is some underlying disturbance leading to faulty absorption and utilization or to increased excretion or metabolism. Often many contributing factors are found in a single patient. Any patient with gastrointestinal disease, particularly if he has anorexia or nausea, should have his previous nutritional history carefully evaluated. Whenever a history of prolonged hypermotility, loss of mucosal integrity or diarrhea is elicited, poor absorption must be considered. In such patients the resulting loss of nutritional substances increases the intestinal irritability and completes the vicious cycle.

It is well to remember that in patients with digestive disturbances who have been on greatly restricted diets or have been unable to eat adequately, deficiencies of the B complex may be precipitated by the intravenous administration of large amounts of fluids and dextrose. The water-soluble B complex may be literally washed out, and the excessive carbohydrate may induce deficiency states, particularly deficiencies of vitamin B_1. Recent work has also demonstrated that intestinal bacteria which can synthesize some of the members of the B complex may disappear after the oral administration of a sulfonamide compound, especially one of the poorly soluble types.[1] Thus it would appear that sulfonamide therapy may contribute to a deficiency of the B vitamins by depriving the patient of the amounts normally synthesized.

Dietary History.—When no underlying factors can be found to account for symptoms suggestive of vitamin deficiency, the possibility of an inadequate dietary intake must be considered, and in such cases the dietary history is of extreme importance. The grossly deficient diet can be recognized without difficulty. Particular attention should be given to patients on reduction diets and to those whose diets are highly restricted because of peptic ulcer or diabetes, or for any other reason. Patients whose diets have been questionably deficient constitute a much more difficult problem. Unfortunately, the average practitioner does not have the time to elicit a careful, detailed dietary history or the training in the methods of calculation and analysis required to interpret it. Furthermore, the patient is often an inaccurate observer, and the information obtained may be unreliable. Even the best dietary history does not take into account variations in cooking habits or defects of absorption and storage.

Physical Examination.—The earliest signs and symptoms of mild deficiency states are listed in table 2. The first physical changes caused by depletion of the B complex are probably those involving the tongue and the

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From the Department of Internal Medicine, Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C.

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[1] Najjar, V. A., and others: The Biosynthesis of Riboflavin in Man, J. A. M. A. **126**: 357 (Oct. 7) 1944.

mouth. The tongue usually shows an increase in color, and the fungiform papillae may appear abnormally prominent. Papillary atrophy begins on the margins of the tongue; eventually the entire tongue may become denuded, and superficial ulcers may appear. Spongy, granular hypertrophy of the gingival margins and fissures at the angles of the mouth may accompany these changes. Such findings would immediately focus attention on the possibility of avitaminosis, and they do not require any particular elaboration. It is important to recognize, however, that even these well known manifestations of vitamin deficiency are not pathognomonic. Cheilosis, which is usually ascribed to a depletion of riboflavin, may be caused by a deficiency of other members of the B complex as well, or may result from poorly fitting artificial dentures or poor oral hygiene. Similarly, changes in the tongue may not be due to a depletion of niacin alone, as is commonly believed.[2]

Diminution of vibratory sense over the extremities is often an early finding in deficiencies of the B complex. Alterations in epidermal structures are more apt to occur as a later manifestation, and may occasionally be due to a lack of vitamin A rather than to a deficiency of the B complex.

Accessory Laboratory Findings.—General laboratory data are of little help in the majority of patients with early vitamin deficiencies. The blood picture may be entirely normal, or it may show a moderate degree of anemia, which in my experience is most frequently of the normocytic, hypochromic type. Urinalysis and determinations of the total serum proteins, the albumin-globulin ratio and the basal metabolic rate may all be within normal limits. Gastric analysis and examination of the stool do not reveal any findings of specific significance. Esophagoscopy and gastroscopic studies in patients with deficiencies of the B complex usually reflect the changes which can be seen in the mouth and the tongue. Roentgenologic studies of the gastrointestinal tract following the administration of barium sulfate may reveal pooling, puddling, segmentation and loss of the pattern of the small intestines; these changes may also occur in a variety of other conditions, however.

In the past few years laboratory procedures have been devised to measure vitamin levels in the blood as well as the amounts excreted in the urine before and after a test dose of vitamins. Low levels of vitamins in the blood and urine may exist without depletion of stores in the tissues, however, and cannot always be considered proof of a physiologic deficiency. In a previous study the use of these procedures was investigated in human subjects with unquestionable deficiency disease, in patients with symptoms suggestive of an early avitaminosis and in normal controls having no complaints and no demonstrable organic disease.[3] This study showed a definite relationship between the clinical picture of the vitamin deficiency and the laboratory findings. The well recognized clinical observation that deficiencies of single vitamins are rare in man was supported by the fact that, in general, patients with unquestionable deficiency states showed lowered levels for most of the vitamins studied.

Since it is undoubtedly true that biologic and biochemical alterations precede any obvious changes in the tissue, it would appear that latent deficiency disease may be more accurately detected by the use of such biochemical and biologic tests. Unfortunately, however, such procedures still require a well equipped laboratory, and at present remain in the realm of the special investigator.

Interpretation of Symptoms.—The subjective manifestations which occur in persons with subclinical avitaminosis have been emphasized. The multiplicity of symptoms which have been ascribed to early deficiency states is seen in table 3. The similarity between these symptoms and the varying and ill defined complaints described in neurasthenia is all too obvious. It is of the utmost importance, however, to recognize that the two conditions may coexist, since neurotic persons often have food phobias and hence are likely to eat an inadequate diet. The difficulty of determining whether or not a subclinical deficiency is present in a patient with the symptoms described, combined with the fact that purified vitamin substances are relatively nontoxic even in huge doses, has often resulted in prolonged,

TABLE 2.—*Aids in the Recognition of Avitaminosis*

Vitamin	Signs	Symptoms	Accessory Laboratory Data
A	Xerosis conjunctivae, hyperkeratosis	Night blindness	Decrease in plasma A level
C	Gingival hypertrophy, anemia	Spongy bleeding gums, painful joints, subcutaneous hemorrhages	Roentgen changes in long bones, decrease in plasma C level, response to saturation test, capillary fragility
Niacin	Stomatitis, glossitis, cheilosis, papillary atrophy, nonspecific perineal lesions, urethritis, vaginitis, pellagrous dermatitis, depression, reactive psychosis	Nervousness, anorexia, diarrhea, sore mouth and tongue, epigastric burning	Decrease in urinary excretion of niacin
Riboflavin	Magenta glossitis, cheilosis, seborrhea; nasolabial folds, ears, forehead	Eyes lacrimation, photophobia, discharge; sore tongue and mouth	Vascularization of cornea, decreased urinary excretion of riboflavin
Thiamin	Central opthalmoplegia, symmetrical polyneuropathy, combined system syndromes, cardiovascular disturbances	Weakness, fatigability, paresthesias—burning, calf tenderness, edema	Nerve degeneration as shown by biopsy, decrease in urinary thiamin excretion
K	Hemorrhages, with disorders of absorption or jaundice	Bleeding	Increased prothrombin time, other evidence of hepatic disease

TABLE 3—*Symptoms Described as Manifestations of Early Vitamin Deficiency*

Fatigue *
Insomnia
Anorexia *
Vertigo
Paresthesia *
Palpitation *
Nervousness *
Headache *
Irritability *
Dyspepsia *
Depression *
Abdominal discomfort
Muscle weakness *
Backache *
Apprehension *
Decreased output of work
Weakness *
Lassitude *
Muscle pain
Anxiety
Confusion

* Each symptom marked with an asterisk is given also as a symptom of neurasthenia in the standard textbooks of medicine

indiscriminate administration of expensive vitamin substances without accurate scientific evaluation. It has been shown that the administration of vitamin supplements to patients not having an underlying deficiency does not produce any increase in general health or well-being.[4]

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[2] Cayer, D, Ruffin, J M., and Perlzweig, W. A. The Clinical Significance of Glossitis and Cheilosis in Deficiencies of the B-Complex, South M. J. 38: 111, 1945.

[3] Ruffin, J. M; Cayer, D, and Perlzweig, W. A.· The Relation Between the Clinical Picture of a Mild or Early Vitamin Deficiency and Laboratory Determinations of Vitamin Levels, J. Gastroenterology 3: 340, 1944.

The Therapeutic Trial.—It is a practice of many physicians to administer vitamins as a therapeutic test in cases in which the dietary history and the patient's symptoms would indicate an underlying deficiency state. If such a trial results in rapid disappearance of symptoms and definite improvement, the suspected diagnosis would appear to have been sound. However, mild subjective improvement in a patient having vague and poorly defined symptoms is extremely difficult to evaluate. Improvement will often follow the administration of mild sedatives, antispasmodics or even placebos. The psychic effect of therapy was emphasized in a study of 200 asymptomatic persons without evidence of organic disease, some of whom were given vitamin supplements in various forms for a period of thirty days, while the rest received placebos. The improvement noted in general well-being was the same in the two groups. Thus it appears obvious that too great a significance should not be attributed to moderate subjective improvement alone.

TREATMENT

The basic treatment of early primary deficiency states is to induce the patient to take an adequate diet, provided that he is able to eat it. Food undoubtedly contains still unrecognized factors necessary in minute amount for proper nutrition. These are not present in purified combinations of vitamins. The constituents of a well balanced diet are being increasingly emphasized and brought to the attention of the public. Table 4 shows the principal sources of the vitamins. Patients with mild avitaminosis should be advised to include in their daily diet 1 pint (0.5 liter) of milk, whole or skimmed, one serving of cheese, one to two eggs, one adequate serving of meat, fish or poultry, two leafy green vegetables and one yellow vegetable (these may be cooked or raw), one whole grain cereal with milk or cream, two slices of enriched bread with butter, fruit juice and fresh or cooked fruit. These items, if properly chosen, need not be expensive. To them the patient may add any other foods of his own choosing.

TABLE 4.—*Foods as Sources of Dietary Essentials**

A	Thiamin	Niacin	Riboflavin	C
Dairy Products: Eggs, Liver, Vegetables: Green, Yellow	Cereals, Meats	Meats	Milk	Citrus Fruits, Vegetables
Greens	Pork	Liver	Liver	Grapefruit
Carrots	Beef	Brewers' Yeast	Brewers' yeast	Oranges
Liver	Veal	Pork	Milk	Strawberries
Squash	Ham	Bran	Prunes	Cantaloupe
Sweet potato	Brewers' yeast	Salmon	Fish	Cabbage
Eggs	Whole wheat bread	Poultry	Beef	Turnips
Milk	Dried beans	Beef	Beans	Potatoes
Cheese	Peas	Peanuts	Eggs	Tomatoes
	Enriched bread		Pork	
	Oatmeal		Peas	

* Food and Nutrition Committee of American Medical Association and Food and Nutrition Board of National Research Council.

In addition to such a diet the physician may prescribe therapeutic doses of the specific substances listed in table 5. He should be familiar with the particular product which he chooses to dispense and should compare the dosages listed on the label with the therapeutic requirements given in the table. It will be seen that the suggested therapeutic doses are five to ten times the recommended daily allowances. Since single deficiencies rarely occur in man and since the metabolic functions of the members of the B complex are closely related, this group of vitamins should always be administered together.

TABLE 5.—*Daily Dietary Allowance of Vitamins for Adults**

Vitamin	Recommended Men (70 Kg.) Moderate Activity	Recommended Nonpregnant Women (56 Kg.) Moderate Activity	Minimum	Therapeutic Dose
A, international units.	5,000	5,000	4,000	25,000
Thiamin, mg...........	1.8	1.5	1.0	10 20
Riboflavin, mg.........	2.7	2.2	2.0	5-15
Niacin, mg.......	18	15	10	100 150
Ascorbic acid, mg......	75	70	30	100 300
D, international units.	400			

* Food and Nutrition Board, National Research Council.

In cases in which actual deficiencies exist the use of potent purified vitamin compounds is usually followed by a satisfactory response within one to three weeks. A trial of brewers' yeast or whole liver is advisable when this response does not occur. If it is not effective, it may be necessary to resort to parenteral administration. No benefit can be anticipated unless an actual need for therapy exists, and there is probably no justification for continuing such treatment over long periods of time.

In this country deficiencies of the fat-soluble vitamins are relatively uncommon in adults and when they occur are usually secondary to hepatic disease or to some other disturbance of absorption. Often the disturbances of absorption can be corrected by the intramuscular administration of liver extract, although response to treatment is usually slower than in deficiencies of the B complex alone.

CONCLUSION

The clinical diagnosis of early vitamin deficiency states is often difficult, particularly when physical findings are absent. It is unwise to make such a diagnosis on the basis of symptoms alone. If a definite history of an inadequate diet is also obtained, a trial of vitamins in therapeutic doses is indicated. In patients who have an actual deficiency, a satisfactory response to oral therapy may be anticipated within one to three weeks. The diagnosis in each individual instance depends on the careful evaluation of symptoms, physical findings, accessory laboratory data and response to specific therapy.

Primary deficiency states can be avoided by the proper selection of foods in the daily diet. Low economic status or reduction in the total food intake to *provide for shipment abroad need not reduce the quali-*

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[4] Ruffin, J. M., and Cayer, D.: The Effect of Vitamin Supplements on Normal Persons, *J. A. M. A.* **126**: 823 (Nov. 25) 1944.

tative value of the diet. An adequate diet is still obtainable in this country, even for families of low income, and in spite of reduction in the total intake to provide for shipment of food abroad.

ABSTRACT OF DISCUSSION

DR. CHARLES F. NELSON, Beverly Hills, Calif.: For the past ten years our research department has been making a study with photomicrographs showing the results of the different deficiencies on most of the tissues of the body—the bone, the retinas, the teeth, all the different glands and all the organs. My associates and I have come to the conclusion that practically every difficulty with the human race has to do with nutrition as it is related to cell chemistry. There isn't any way that one can estimate the need of vitamins by any laboratory facilities that we have to date, but we think that all patients should receive sufficient amounts and proper ratios of minerals, vitamins, proteins and sugar. Most patients are getting too much fat. I think that until physicians are familiar with this whole question of cell chemistry progress in the practice of medicine is not going to advance rapidly.

DR. H. VERN SOPER, Los Angeles: We are highly indebted to the writer of the paper. However, I feel that we are doing in vitamins and in our diets and in our nutrition the same thing that some are doing in the practice of medicine: Too much speculation on one detail rather than a broad, comprehensive view of the patients' problems as a whole. Most vitamin deficiencies must be considered the result of a dietary deficiency. The means by which we evaluate the vitamins in the body is a highly specialized field, but the supplying of vitamins alone does not make up for the physiologic shortages which usually accompany the lack of vitamins. It has been my observation, that giving large doses of vitamins to people who present the symptoms we saw here on the chart was not sufficient. We then prescribed a balanced diet which helped some; but even this was not adequate. It was not until these patients were given a very unbalanced diet especially rich in protein that satisfactory and rapid improvement was noted. I believe that if they have a dietary and vitamin deficiency an average daily requirement is not sufficient to make up for their past losses. It has been my policy to insist that persons who show vitamin and dietary deficiencies have a very high protein diet along with vitamin management. Then, inside of ten days, a decided improvement should be seen in their symptoms. I have found that a high protein breakfast is far more sustaining to the patients during the daylight hours than to have them eat their large protein meal at night and then, twelve hours later, begin the day's work.

DR. J. CRAIG BOWMAN, Upper Sandusky, Ohio: There is a thought that I want to leave with you which I brought up last year. It is that I think we should go further back than simply treating these avitaminoses with vitamins. I believe that the fundamental trouble we are having is due to depletion of our natural vitamin sources. I believe it is going to be the physician's problem to reeducate our people to the fact that we must put back into the soil many of the natural elements which we have taken out and as a consequence of which there is a lack of the proper vitamins and minerals in our food.

DR. DAVID CAYER, Winston-Salem, N. C.: In North Carolina we are intensely interested in this problem. Ten years ago, when patients with pellagra were desired for study, a form letter sent to the county health departments would provide the required number. This is no longer the case. In the past four years we have seen only 2 patients with classic, active pellagra. We attribute this improvement largely to the intake of more adequate diets. However, many persons are still taking diets considered to be inadequate. A tremendous amount of work remains to be done. As Dr. Nelson said, early changes due to a deficiency state are probably widespread in spite of the fact they are difficult to demonstrate by physical signs. We are working on that aspect of the problem now. We feel that not only can the diagnosis be made earlier, but more intelligent specific therapy can be instituted if we are able in some scientific manner to measure the actual requirements of these individuals.

COMPLICATIONS OF INTRATHECAL USE OF PENICILLIN

THEODORE C. ERICKSON, M.D.
MABEL G. MASTEN, M.D.
and
HENRY M. SUCKLE, M.D.
Madison, Wis.

The brilliant therapeutic results and the relatively rare toxic reactions from the use of penicillin have led many physicians to overlook its possible toxicity when injected directly into the subarachnoid space. Serious reactions following intracisternal and intraventricular administration, as well as complications of its intrathecal lumbar injection, have been accumulating in the literature. In spite of these reports, one still finds widespread ignorance of the toxic reactions to the intrathecal use of penicillin. These complications prompt us to describe the reactions, analyze their cause and, if possible, find means of avoiding them. With this in mind we are reporting 4 cases and analyzing them in relation to the complications reported by other authors.

REPORTS OF CASES

CASE 1.[1]—A woman aged 45 years had been ill a week with an infection of the upper respiratory tract. She was admitted to Columbia Hospital, Milwaukee, Nov. 9, 1944, with findings of staphylococcic cerebral abscess and meningitis. Intramuscular administration of sulfonamide drugs and penicillin was started immediately and continued with interruptions until Jan. 16, 1945. Fifty thousand units of penicillin in 10 cc. of isotonic solution of sodium chloride was given November 9 and again Nov. 10, 1944. Within an hour after the second intraspinal injection she complained of feeling ill, had pain in head, back and "stomach." On November 2 blood-tinged fluid and spinal block, which persisted, were found. Intrathecal injections were made November 15 and 16, 40,000 units in 6 cc. and 50,000 units in 10 cc., respectively.

A right hemiplegia developed November 12. At operation (T. C. E.) a fairly well encapsulated abscess was found in the left occipital lobe, about 1 mm. below the surface. Thick yellow pus was evacuated, a rubber catheter was inserted into the cavity, and 2,000 units of penicillin and sulfanilamide powder were applied locally.

There was dramatic response to surgical treatment, and the patient had made an almost complete recovery by November 23, at which time she was afebrile and well oriented. However, urinary retention developed, followed by pain and weakness in the legs. By November 27 she had flaccid paralysis, incontinence and a sensory defect below the distribution of the twelfth thoracic roots. A laminectomy on November 28 (T. C. E.) from the ninth thoracic to the first lumbar vertebra, inclusive, revealed extensive adhesions in the subarachnoid and subdural spaces with a complete obliteration of subarachnoid space at the tenth thoracic level. The cord at this level was swollen and pulseless, and 4 cc. of clear yellow fluid was aspirated from its interior. Improvement beginning November 30 was steady, though slow. She was discharged from the hospital March 20 with residual of the paralysis.

CASE 2.—J. R., a child aged 22 months, had been ill two weeks before she was admitted to the Methodist Hospital[2] Nov. 19, 1945, with pneumococcic meningitis. Besides intramuscular injection of penicillin, sulfadiazine and type VI pneumococcus serum she was given 15,000 units of penicillin

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From the departments of neurosurgery and neuropsychiatry, University of Wisconsin Medical School, Madison, Wis.

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[1] Material for the report of this case was provided by Dr. Milton Borman and Dr. John Garvey.

[2] Dr. Margaret Prouty provided the excellent résumé of the Methodist Hospital record.

in 1.5 cc. of isotonic solution of sodium chloride intrathecally daily for three days beginning November 21. Considerable improvement occurred followed by exacerbation of symptoms November 28, at which time she was given her fourth intrathecal injection of 15,000 units of penicillin in 1.5 cc. of saline solution. On November 29 she had paralysis of extraocular muscles and decided retraction of the head; she preferred to be on her side, with legs flexed. She was alert and responsive, but movements of head were painful. It was assumed that there was a reactive arachnoiditis from penicillin irritation and continued fever from sulfadiazine or penicillin administered parathecally, and all treatment was stopped. Again there was improvement, but two days later, on December 3, a relapse occurred, at which time a spinal subarachnoid block was found. When examined after transfer to the Wisconsin General Hospital on December 3 she had a weak cry and moved her extremities on painful stimuli; her rectal temperature was 103.4 F., and her pulse rate 140. Two hours later, before any treatment had been instituted, she became less responsive, had tremor of the arms and picked at the bed clothes; her extremities assumed position of flexion and her pupils did not react to light.

Table 1 (case 1).—*Dosage of Penicillin and Observations Concerning Spinal Fluid* .

Date	Pressure, Estimated	Blood Cells: White	Blood Cells: Red	Culture	Penicillin, Intraspinal	Comment
11/ 9/45	Increased	2,430	150	Gram-positive cocci	50,000 units in 10 cc.	Organism identified as staphylococci 600 mg. protein per hundred cubic centimeters
11/10/45	....	2,280	1,240	Positive	50,000 units in 10 cc.	Complained of pain in head, back, stomach soon after intraspinal injection
11/12/45	Queckenstedt's test: no rise	12	Many	....	....	No bacteria on smear
11/14/45	Queckenstedt's test: no rise	1,180	200	....	....	
11/15/45	Decreased	750	550	0	40,000 units in 6 cc.	Xanthrochromic
11/16/45	....	.....	.....	....	50,000 units in 10 cc.	Xanthrochromic
11/28/45	....	250	9,000	0	....	"Bloody" spinal fluid

Table 2 (case 2).—*Observations Concerning the Spinal and the Ventricular Fluid, with Doses of Penicillin Administered*

	Spinal Fluid						Ventricular Fluid					
Date	Pressure	Cells	Sugar	Protein	Culture	Penicillin	Pressure	Cells	Sugar	Protein	Culture	Penicillin
12/ 5/45	190	700	..	400	Pneumococcus VI	1,500 U. (10 cc.)	130	87	..	125	Pneumococcus VI	25,000 U. in 100 cc.*
12/ 6/45	110	43,150	15	300	....	2,500 U. (10 cc.) 2,750 U. (15 cc.)	90	1,567	57	100	0	12,500 U. in 50 cc.†
12/ 7/45	85	2,825	..	310	0	2,750 U. (15 cc.)	...	.....	..	...	..	12,500 U. in 50 cc.‡
12/ 8/45	200	83,000	33	...	0	5,000 U. (20 cc.)	...	678	..	...	0	12,500 U. in 50 cc.†
12/ 9/45	...	6,020	..	...	0	2,750 U. (15 cc.)	...	320	..	...	0	15,000 U. in 60 cc.†
12/10/45	...	6,684	35	...	0	....	150	10,896	42	...	0	12,500 U. in 50 cc.†
12/11/45	190	4.880	30	200	0	2,500 U. (10 cc.)	290	3,440	43	30	0	5,000 U. in 20 cc.†
12/12/45	240	.....	..	...	..	2,750 U. (15 cc.)	110	.....	..	...	..	12,500 U. in 50 cc.†
12/13/45	270	.....	..	...	..	5,000 U. (20 cc.)	80	.....	..	...	..	6,250 U. in 25 cc.†

* The penicillin was administered in Hartmann's (lactate-Ringer) solution.
† The penicillin was administered in Ringer's solution (isotonic solution of three chlorides).
‡ The penicillin was administered in Ringer's solution; 150,000 units of rabbit serum, pneumococcus VI, was also administered.

Although her condition was obviously fulminating, rigorous therapy was continued, penicillin being injected intrathecally and intraventricularly. After the initiation of this treatment she went into a shocklike state with complete muscular flaccidity and small unreactive pupils. The subsequent temperature record showed an erratic course, usually subnormal and as low as 93 F. She died December 14.

At autopsy the brain weighed 1,000 Gm. and was wet, and the gyri were flattened. There were petechial hemorrhages over the entire surface of the brain, with a subarachnoid hemorrhage over the right temporal lobe. The base was covered with a fibropurulent exudate which extended into and obliterated the intercerebral sulci, and there was exudate in the cisterna magna. There was an abscess (4 by 4 cm.) in the left temporal lobe, one (1 by 2 cm.) in the right thalamus and a diffuse hemorrhage in the left thalamus. There was a serofibrinous purulent exudate extradurally on the posterior surface of the lumbar spinal cord. The cord was lusterless, with subarachnoid hemorrhage, and was covered with an opaque inflammatory membrane.

Case 3.—V. J. B., a man aged 20, was admitted to the Wisconsin General Hospital Sept. 20, 1945, with signs of a right cerebellar abscess, secondary to chronic otitis media and mastoiditis, necessitating emergency operation. The abscess, the result of a mixed bacterial infection, was deep in the anterior superior portion of the right cerebellum close to the brain stem. After evacuation of 15 cc. of pus, 8 cc. of penicillin solution containing 10,000 Oxford units per cubic centimeter was instilled into the abscessed cavity, and drainge was afforded by a soft rubber catheter. Immediately the patient showed signs of decerebrate rigidity, which later merged into generalized flaccid paralysis. Sulfadiazine (5 Gm.) was given parenterally and penicillin (10,000 Oxford units every three hours) intramuscularly daily from the time of operation until death, sixteen days later. Autopsy showed residuum of a drained, right cerebellar abscess, infarction of the remaining right cerebellar hemisphere, extensive subacute meningitis and ependymitis.

Case 4.—M. F., a 6 year old girl, a patient at the Wisconsin General Hospital, became ill with signs of respiratory infection on Feb. 24, 1944. Administration of sulfathiazole resulted in improvement, but two days later signs of meningitis developed, which was confirmed by spinal puncture. February 29 sulfadiazine and type III pneumococcus serum were given, and subsequent spinal taps indicated resolving meningitis. In spite of improvement in spinal fluid findings, penicillin was given intraspinally, 10,000 units in 10 cc. every twelve hours beginning March 4, for forty-eight hours. Before the first injection the spinal fluid was opalescent, the cell count was 708 and the colloidal gold reaction was 0122221000. The day following the first intrathecal injection of penicillin her head was more retracted, and the spinal fluid was thick and green; there was no block. All penicillin therapy was stopped March 7, but retraction of the head continued to increase until the occiput was almost touching the back, resulting in mechanical difficulty in swallowing. The legs were flexed, she was alert, percussion of her head was not painful, but movement of head or legs was extremely so. She was up and about on March 25, with retraction still present. By the time of discharge on April 9 the retraction had finally been overcome, and recovery was eventually complete.

COMMENT

Siegal[3] (1945) reported an instance of transverse myelopathy following recovery from meningitis, which has direct bearing on case 1 of the present report. His patient, a woman with pneumococcic meningitis, was given 10,000 units of penicillin intrathecally on the day of admission to the hospital, in addition to penicillin and sulfadiazine administered parenterally. Her condition became worse after two subsequent daily intraspinal injections of 40,000 units (1,000 units per cubic centimeter in each instance). Intraspinal therapy was continued during the second week, the intraspinal dose being reduced to 20,000 units daily. On the seventeenth day she had a complete flaccid paraplegia with retention of urine and a sensory level at the tenth thoracic dermatome. There was no evidence of block and the fluid was sterile. She recovered, but serious paralytic residuals persisted. Siegal concluded that this complication may be regarded as a natural, although rare, complication of the disease or that it may be due to intensive intraspinal penicillin therapy.

Percival Bailey[4] (1945) has reported a case of a 15 year old boy who had been ill with meningitis for a week before he received two intraspinal injections of 50,000 units of penicillin in one day. This was followed in three days by convulsions and weakness of his legs. By the twelfth day after the intrathecal administration of penicillin he had flaccid paralysis with sensory level at the tenth thoracic dermatome and spinal block. A laminectomy the twenty-sixth day after intraspinal therapy at the seventh, eighth and ninth thoracic dermatomes revealed the subarachnoid space to be completely obliterated and the spinal veins thrombosed. A biopsy of the leptomeninx showed dense scar of collagenic tissue in which inflammatory cells were entirely absent. Dr. Bailey in his comment apparently did not consider this an adverse effect of intraspinal administration of penicillin, but concluded that this represented the end stage of an inflammatory exudate which predominated in the spinal region.

Sweet and his collaborators[5] in an earlier report analyzed the mortality and morbidity of 16 cases of pneumococcic meningitis in which sulfonamide compounds and penicillin were administered parenterally and intrathecally. In this series there were 9 deaths and 7 recoveries. Among the recovered patients there were 4 instances of reactions ascribed to intrathecal action of penicillin. In each instance the lesion involved the lower segments of the spinal cord or the roots of the lumbosacral plexus, and symptoms developed between the tenth and the fourteenth day after initiation of intraspinal therapy.

Since the original report 31 additional patients with pneumococcic meningitis have been treated by Sweet[6] with careful attention to the concentration and size of dose by the intrathecal route. Of this group 16 have recovered. There has been only one complication: a patient was inadvertently given 200,000 instead of 20,000 units. In the course of a week progressive irritation with increased spinal fluid protein and eventually a subarachnoid block, developed. He recovered with some residual effects.

In another patient of Sweet's series[5] an attempt was made to secure better diffusion of the penicillin by alternately injecting it into the cisterna magna and the lumbar subarachnoid space. The cerebrospinal fluid became bloody after twelve days; the patient went into coma, and died on the nineteenth hospital day. The autopsy showed a blood clot in the cisterna magna and meningeal adhesions just below the cisterna magna. This seems of particular significance in relation to case 3, in which it appeared that the concentrated penicillin had leaked out of the cerebellar abscess cavity. The autopsy revealed an area of hemorrhagic infarction at the site of the injection of penicillin, similar to the changes observed by Russell and Beck[7] (1945) in experiments with injection of concentrated penicillin solution into the cerebral cortex of rabbits.

Although one cannot prove that the meningitis did not contribute in part to the various complications observed, the evidence is strong that the major factor in each instance was the intrathecal injection of the penicillin. In reviewing our own cases of myelopathy and those previously reported, one is impressed with several features that they have in common, notably the onset ten to seventeen days (usually ten to fourteen days) after initial intrathecal administration of penicillin and the localization of the pathologic process to the lower cord and cauda equina (the tenth thoracic dermatome was the usual level clinically). Additionally, in several instances the patient had recovered from meningitis or seemed to be on the road to recovery, usually with sterile spinal fluid, often with evidence of spinal block. Another frequently noted observation in the progress of these intraspinally treated patients has been frequent relapses, which suggests that the penicillin has sterilized the subarachnoid space but has also increased the formation of exudate, resulting in encysted infection to which penicillin does not gain access by way of either the blood stream or the spinal fluid. From the references in the literature[8] to subarachnoid block without mention of neurologic complications, one may infer that the process frequently stops short of irreversible damage.

One must note, however, that the meningeal or nervous tissue reactions to penicillin may not be strictly localized to the vicinity of the injection in the spinal canal. In case 4 there was apparently a much more widespread irritation. Similarly, there is the case reported by Forrest[9] (1945), in which paralysis developed in the upper extremity, as well as the other types of complications listed by Sweet[10] and by Walker and Johnson.[11]

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[3] Siegal, S.: Transverse Myelopathy Following Recovery from Pneumococcic Meningitis, J. A. M. A. **129**: 547 (Oct. 20) 1945.

[4] Bailey, P.: Chronic Leptomeningeal Thickening Following Treatment of Meningitis with Sulfa-Drugs, Ann. Surg. **122**: 917 (Dec.) 1945.

[5] Sweet, L. K., and others: The Treatment of Pneumococcic Meningitis with Penicillin, J. A. M. A. **127**: 263 (Feb. 3) 1945.

[6] Sweet, L. K.: Personal communication to the authors, May 20, 1946.

[7] Russell, D. S., and Beck, D. J. K.: Local Action of Penicillin and Sulfamezathine, and Penicillin-Sulfamezathine Mixture on Rabbit Brain, Lancet **1**: 497 (April 21) 1945.

'd Nelson, J.: Penicillin in the Treatment of J. A. M. A. **128**: 778 (July 14) 1945.

urological Complications in Cerebrospinal Meningitis Treated with Penicillin, Brit. M. J. **2**: 805 (Dec. 8) 1945.

[10] Sweet and others.[5] Sweet.[6]

[11] Walker, A. E., and Johnson, H. C.: Principles and Practice of Penicillin Therapy in Disease of the Nervous System, Ann. Surg. **122**: 1125 (Dec.) 1945.

An observation not encountered in reviewing the literature on the intrathecal administration of penicillin was the finding of an intramedullary cavity in association with the adhesive arachnoiditis in case 1. Intramedullary cavitation secondary to spinal adhesive arachnoiditis of other origin has been noted by several authors. A recent paper by Lubin[12] (1940) suggests that it is due to decreased blood supply and consequent necrosis of the central portion of the cord. It is significant that Bailey noted a thrombosis of the vessels of the spinal cord as well as arachnoiditis.

The reaction of the meninges limited to the neighborhood of the site of the intrathecal injection of penicillin suggests that concentration of the penicillin solution in the cerebrospinal fluid is the most important factor in producing this complication. Analysis of the material suggests that the reactions are more likely to occur with relatively concentrated solutions (5,000 to 50,000 units per cubic centimeter) than with dilutions of 1,000 units per cubic centimeter or less, as recommended by the Committee of the National Research Council. In case 4 radiculitis developed in the 6 year old patient following the use of 10,000 units in a volume of 10 cc., which, however, was repeated every twelve hours for forty-eight hours. In the patient reported by Siegal[2] (1946), transverse myelopathy followed the use of a solution of 1,000 units per cubic centimeter, with a daily dosage as high as 40,000 units. It is obvious that the final concentration obtained in the cerebrospinal fluid is dependent not only on the concentration of the penicillin solution but on the total dosage. That these reactions depend on the concentration of penicillin in contact with the pia-arachnoid is indicated not only by the clinical cases but by the experimental findings of Russell and Beck[7] (1945) and the work of Walker and others.[13]

SUMMARY AND CONCLUSIONS

In 4 cases complications occurred following intrathecal administration of penicillin. In 3 of these cases the penicillin had been injected intraspinally. From these cases and those previously reported it appears that the most frequent and characteristic reaction occurs in the meninges leading to adhesive spinal arachnoiditis and in the more severe cases leading to transverse myelopathy. In 1 case recovery from such a cord lesion followed decompressive laminectomy and aspiration of an intramedullary cyst. In another case, signs of damage of the brain stem occurred following the injection of penicillin into the cavity of a cerebellar abscess from which the penicillin leaked into the basal cisternae.

The important factors in the production of toxic complications are (1) concentration of penicillin solution, (2) slow diffusion of spinal fluid, (3) size of individual doses, (4) frequency of injection and (5) duration of intraspinal therapy.

The occurrence of these complications may be minimized by using a dilute solution of penicillin, by avoiding the use of a large total dosage and by limiting the number of injections to a minimum. Further, in consideration of the altered hematoencephalic barrier in disease, it is suggested that greater reliance be placed on early treatment with maximum doses of parenterally injected penicillin, and that when possible intraspinal administration be avoided.

ABSTRACT OF DISCUSSION

Dr. Irving J. Sands, Brooklyn: The authors call attention to a rather hazardous situation arising from intrathecal administration of penicillin. The use of intrathecal administration of serum began with antimeningococcus serum and later with tetanus antitoxin. With the introduction of arsphenamine thirty years ago we began to administer the drug intrathecally according to the methods of Swift, Ellis and Ogilvie. However, Dr. Bernard Sachs and his co-workers, in a paper entitled "On the Intravenous and Not the Intraspinous Administration of Arsphenamine in Neurosyphilis," called our attention to the neuropathies resulting from the use of the drug intraspinously. Our entire intraspinous therapy is based on the theory of the blood brain barrier which exists in health but which needs modification as far as disease is concerned. With the introduction of the sulfonamide drugs, antimeningococcus serum has no longer been used intraspinously. However, the introduction of penicillin has again made intraspinous therapy a method of recognized procedure. My impression gained from clinical observation is that there is no need for intrathecal administration of penicillin in meningitis. Meningococcic meningitis lends itself readily to sulfonamide therapy. The trouble that one will encounter is with pneumococcic meningitis, and in that particular type the early administration of intravenous penicillin in conjunction with sulfadiazine will cure most of the patients. Occasionally the organism will persist in the spinal fluid despite the clinical improvement of the patient. Then one may have to use intrathecal administration of penicillin. In doing so, however, one must prepare the patient properly, first by administering a hypertonic glucose solution intravenously, secondly by withdrawing two or three times the amount of spinal fluid in proportion to the solution of penicillin one wishes to inject and thirdly by diluting the solution of penicillin, giving only 20,000 units in twenty-four hours. The use of penicillin intrathecally is necessary only on rare occasions.

Dr. Benjamin Boshes, Chicago: This paper is a most important contribution to our utilization of this antibiotic agent. However, I believe that too much emphasis is placed on the negative phases of penicillin therapy. If one uses penicillin as it is suggested it be used, rather than using it in unusually large doses, many of the complications can be avoided. My experience has been exclusively with men of the Army, and perhaps a sample of army material as against civilian material is poor because the average soldier is healthy and almost hard to kill. Secondly, in the Army great emphasis is placed on the early diagnosis of meningitis, with the result that it is rarely that we see a soldier in a true meningitic state. The diagnosis is usually made in the septicemic state. Rosenberg and his group at the Great Lakes Naval Training Station reported 72 cases of meningitis of all types—meningococcic, pneumococcic and others—with cell counts up to 50,000. In his series, treating them by the intrathecal method exclusively, he had 100 per cent recovery and not a single important complication. I have spoken to Dr. Rosenberg about this group because it seemed almost fantastic, and he assures me that in following his cases there were no recurrences nor complications, except on occasional transient palsy. In our group we had exactly the same results. We saw none of the complications that have been described here. I am attributing these results to one factor only: we gave penicillin exactly as it had been suggested in our official directives. Overseas we did not have access to much literature, but our army directives in this case at least were very useful. We never gave more than 10,000 units at a time intrathecally. It was rarely that we had to repeat the administration during the day, and only in exceptional cases did we have to give more than four intrathecal injections of penicillin in all. Penicillin given as 10,000 units intrathecally, not repeated oftener than necessary, has in the hands of many been a drug without complications.

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[12] Lubin, A. J.: Adhesive Spinal Arachnoiditis as a Cause of Intramedullary Cavitation, Arch. Neurol. & Psychiat. **44:** 409 (Aug.) 1940.

[13] Walker, A. E., and Johnson, H. C.: A Convulsive Factor in Commercial Penicillin, Arch. Surg. **50:** 69 (Jan.) 1945; A Note of Warning, J. A. M. A. **127:** 217 (Jan. 27) 1945. Walker, A. E.; Johnson, H. C., and Kollros, J. J.: Penicillin Convulsions, Surg., Gynec. & Obst. **81:** 692 (Dec.) 1945. Walker and Johnson.[11]

Dr. A. Earl Walker, Chicago: There are three main types of complications to penicillin administered directly to the central nervous system. First, the changes occurring in the arachnoid, second, the alterations in the nerve fibers, inducing a radiculitis, and, third, the cerebral reactions, taking the form of convulsions. We have found all three types to occur when penicillin has been given in large doses but practically never when the dose of penicillin has been quite small. Whether the concentration is the predominant factor is hard to determine. Certainly the total amount of penicillin seems to be more important than the actual concentration. Adequate treatment of meningitis with penicillin will depend on the amount of penicillin which actually reaches the various parts of the subarachnoid space. Experimentally in animals and in man, lumbar penicillin does not reach the subarachnoid space over the brain in very high concentrations. As a matter of fact, in some instances we have not found any penicillin in cisternal fluid after the injection of as much as 30,000 units in the lumbar region. Examinations were made of the cisternal fluid for a period of six hours after the injection. The peak is usually reached within four hours. When the injection was made in the cisternal region the distribution of the penicillin is much better. The concentration in the ventricles and in the subarachnoid space over the brain is considerably higher. Even with infections of the meninges, parenteral administration of penicillin in large doses in many instances will not produce an antibiotic concentration in the spinal fluid. It is true that for the more sensitive organisms such as the majority of the meningococci, antibiotic concentrations can be reached by parenteral administration of penicillin, but for the more resistant organisms such concentrations are not reached, and it is necessary to give penicillin intrathecally. I think Dr. Masten has pointed out that the amount of penicillin should be kept as low as possible, for certainly, even if the penicillin is given in small amounts, antibiotic concentrations may be maintained for twenty-four hours. Ten to twenty thousand units seems to be as much as the brain will tolerate in most cases.

Dr. Mabel G. Masten, Madison, Wis: I thank the discussers, with whom I am in complete agreement. I must emphasize, of course, that in regard to civilian practice we do not have the opportunity of seeing the patients as early as the military did. I have no doubt that many of Rosenberg's cases would have responded very favorably to the parenteral methods of penicillin therapy. I must admit that I have held even more nihilistic views toward intrathecal therapies, and although neither the proponents of intraspinal treatment nor I have irrefutable proof to support our views, it seems better wisdom on my part to make a compromise as has been stated in our conclusions for the purpose of achieving at least a thoughtful conservative attitude toward intrathecal injection of any agent.

Radioactive Isotopes of Iron.—The original studies of Hahn and his colleagues in animals and of Ross and Chapin in humans employed a mixture of radioactive isotopes of iron, prepared by bombardment in the cyclotron of iron phosphide. Subsequently Evans and his co-workers at the Radioactivity Center of the Massachusetts Institute of Technology developed methods for preparing two separate isotopes by bombardment of manganese and cobalt respectively. The half-life of one of these isotopes is five years; that of the other, forty-seven days. The fact that the first has its principal radiation in the form of x-rays and the second in the form of beta rays (energetic electrons) has been utilized in constructing a Geiger counting chamber with windows specifically sensitive to the radiation of each isotope. With each isotope there have been developed three products safe for human injection: (1) radioactive iron in the form of ferric ammonium citrate, (2) radioactive hemoglobin derived from the cells of patients who have received radioactive iron and (3) their red cells containing radioactive hemoglobin. —Armstrong, S. Howard, Jr.: The management of Blood Preservation and Blood Substitutes, *Bulletin of the New York Academy of Medicine*, September 1946.

THE RELATIONSHIP OF PHYSICAL MEDICINE TO GENERAL PRACTICE

GEORGE MORRIS PIERSOL, M.D.
Philadelphia

The gratifying and phenomenal progress which physical medicine has made during recent years has not been limited to an increased interest in and better understanding of this form of therapeutics. It has involved a gradual development of a much broader conception of the entire subject. This changed attitude is evidenced in the adoption of the term Physical Medicine as the appropriate designation for this field of practice, thus indicating that it is no longer restricted to treatment, since many of the procedures employed are of definite diagnostic value, particularly in the study of neuromuscular mechanisms. The term physical medicine now also includes occupational therapy, an indispensable adjunct to physical therapy. All of these activities are regarded as essential to any successful, well coordinated program of medical reconditioning. The present concept, therefore, of physical medicine, as illustrated by chart 1, includes several closely associated activities that in the aggregate comprise a special field of clinical medicine of fundamental importance and proved value.

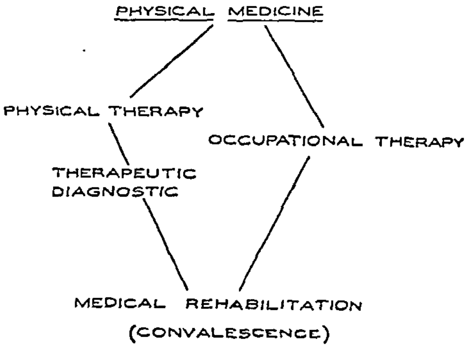

Chart 1.—The present concept of physical medicine.

In spite of the increased recognition and support which physical medicine has received from certain sources, it is a curious phenomenon that the great majority of physicians in this country have failed to show enthusiasm for or to take much interest in this branch of medicine. The reasons for this attitude have been pointed out on other occasions.[1] Suffice it to emphasize that lack of education in this subject during and after completion of the medical course is primarily responsible for this state of affairs. It is encouraging to observe that increasing efforts are being made to correct this deficiency in the medical curriculums.

There has never been a time when such exceptionally good opportunities in physical medicine have been available to the general practitioner as there are at present. The public, long aware of the value of physical forms of treatment and now acutely interested in the worldwide problem of reconditioning, is looking

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From the Center for Instruction and Research in Physical Medicine, University of Pennsylvania.

Read in the General Scientific Meetings at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 2, 1946.

[1] Piersol, G. M.: Value of Physical Medicine in Internal Medicine, J. A. M. A. **117:** 1835-1839 (Nov. 29) 1941; Physical Therapy in Certain Medical Conditions, Arch. Phys. Therapy **24:** 5-13 (Jan.) 1943; Physical Medicine Comes into Its Own in Pennsylvania, Gen. Mag. & Hist. Chron. **46:** 195, 1944.

toward the medical profession for leadership in this field. Thousands of the veterans returning to various communities are suffering from, and many will continue for years to suffer from, injuries and disabilities which require for their proper management physical and occupational therapy. Although a large number of those with and without service-connected disabilities will be under the supervision of the Veterans Administration, it is certain that if proposed programs are worked out, in many instances those returning from the armed forces may be cared for by physicians of their own choosing and in their community hospitals. Those veterans who during their service experience have learned the value of physical therapy will be justified in insisting on a continuation of such treatment from their family physicians. If their own physicians, on whom they depend, are unwilling or unable to furnish such expected treatment, there should be neither surprise nor dissatisfaction on the part of physicians if the veterans seek physical therapy elsewhere. Indeed, in far too many instances this is already taking place.

It is a mistake to think that problems of reeducation or reconditioning are limited to disabilities incurred as the result of war. In a great nation such as this, in which the bulk of the population comprises workers engaged in all forms of activity, the annual toll of industrial accidents far exceeds the number of the battle casualties of any war. When to this figure is added the appalling number of traffic accidents and the indeterminate number of nonindustrial accidents that occur in the home or elsewhere, the toll of civilian injuries that sooner or later require some form of reeducation reaches a staggering total. In 1940 industrial injuries alone were listed at 1,890,000. The loss of time as a result of these injuries, if deaths and permanent disabilities are included, is estimated at 233,840,000 working days, the equivalent of the full time work of 780,000 workers.[2] It has been stated that in any one year more amputations are performed as the result of industrial and civilian accidents than were carried out on the personnel of the armed forces during the entire World War II.

Regardless of any specialists involved in the management of patients in the previously enumerated groups, it is obvious that at some time during the period of their treatment and reeducation most of them will become the responsibility of their family physicians. Since in the course of their disability a large percentage will require some form of physical medicine, the general practitioner, in order to safeguard the best interests of his patients, should be in a position to prescribe or at least properly supervise whatever treatment of this type is indicated.

The reluctance of physicians to employ physical forms of treatment is in no small degree based on widespread misconceptions of what is involved in this type of therapy. It is believed that effective physical therapy requires the use of complicated and expensive apparatus. As will be emphasized later, the experience of a department of physical medicine in a general hospital shows that the contrary is true. Massage, the application of various forms of heat, therapeutic exercises, manipulation and hydrotherapy form the bulk of the treatments given. These are comparatively simple procedures which require, for the most part, no elaborate equipment and are readily adaptable for use in both office and home. However, their successful employment is dependent on: (1) a correct diagnosis; (2) an accurate anatomic knowledge of the part involved; (3) familiarity with the technics offered by physical medicine; (4) thorough understanding of the physiologic reactions which these procedures bring about in the body as a whole as well as locally, and (5) the technical skill and manual dexterity essential to the proper administration of the indicated treatments.

The physician who intends to employ physical therapy should be mindful of the statement made by Mock[3] some years ago, that 90 per cent of physical medicine in general hospitals consists of common sense and intelligent hand work. Since the most useful procedures are relatively simple and fundamental, their employment offers no insuperable difficulties to any physician who is willing to become acquainted with the indications and contraindications for their use. This can be accomplished by the study of any one of the excellent texts that are available. The practitioner will find the Handbook of Physical Medicine prepared under the supervision of the Council on Physical Medicine of the American Medical Association helpful and profitable reading.

As is the case with all therapeutic agents that bring about definite physiologic reactions, the procedures employed in physical medicine are capable of doing harm as well as good. Not only is it essential to select the proper procedure or combination of procedures, but their dosage must be regulated in regard to intensity, duration and frequency. Disappointing and at times harmful results have frequently been recorded because of lack of attention to or ignorance of these details.

The physician who intends to employ physical therapy must, therefore, know what to expect from different forms of treatment in order to intelligently prescribe the type of therapy desired. It frequently becomes necessary to do this in order to serve the best interests of patients. Although for the most part procedures in physical medicine may be carried out anywhere, there are many technics that require cumbersome special equipment and there are certain conditions the treatment of which calls for the employment of highly trained personnel who, as a rule, are seldom available except in well organized departments of physical medicine. Among the forms of treatment that are usually available only in hospitals or offices equipped for physical therapy may be mentioned underwater exercises requiring a therapeutic pool or Hubbard tank, whirlpool baths, the more elaborate forms of hydrotherapy, phototherapy, electrotherapy, mechanotherapy that employs stall bars, rings and extension devices, alternate suction pressure, venous occlusion, fever therapy and electric shock therapy, as well as other treatments that require respirators and a variety of other special therapeutic apparatus.

The prescription for physical therapy should furnish certain data that are essential to the intelligent management of the patient. A definite diagnosis should be given. It is not enough to merely mention a symptom. For example, low back pain is not a diagnosis; it may be the result of a score of conditions, many of which call for different types of physical therapy. The part to be treated should be clearly specified, and it should be stated whether the desired effect is to be general or local. There should be some mention of why the treatment is ordered and what it is intended to accomplish. The exact details of the treatment ordered should be specified, otherwise, they must be left to the judgment of the physical therapeutist. Moreover, any associated abnormality of the patient which tends to reduce his tolerance to, or modify the effect of, physical forms of therapy should be pointed out; for example, diabetes, chronic nephritis, cardiovascular disease, abnormalities of the nervous system (both organic and functional), idiosyncrasies and psychologic peculiarities. If an operation has been performed, there should be some indication as to what was done, when it was performed, what result was obtained and what precautions are indicated because of it. One form of treatment should not be persisted in indefinitely. The type of therapy should be varied according to the patient's condition. As Wright[4] points out, transitions in treatment should keep pace with changes in the pathologic processes. It is the exception rather than the rule to find that patients who are referred for physical therapy are accompanied by a helpful and informative prescription which gives the information just outlined. As a rule, requests for physical therapy are brief, ambiguous and indefinite, and leave much to the discretion and judgment of the physical therapeutist. A survey of the prescriptions coming to a department of physical medicine leads one to believe that, from the point of view of most physicians, heat and massage are synonymous with all forms of physical therapy. What has been said in reference to the proper procedure in prescribing physical therapy is equally applicable to the closely allied field, occupational therapy. These types of therapy should no longer be regarded as separate entities but rather as closely coordinated activities which supplement each other and can with advantage be prescribed together.

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[2] Report of The Baruch Committee on Physical Medicine, New York, April 1944, p. 59.

[3] Mock, H. E., cited in Handbook of Physical Medicine, Chicago, American Medical Association, 1945, p. 351.

From a survey of the prescriptions which referring physicians send to a department of physical medicine, it is evident that there is a striking lack of uniformity on their part in regard to the type of treatment desired. From such a study one is forced to conclude that there is either a wide diversity of opinion as to the proper management of many conditions or that referring physicians are unaware of the possibilities offered by a department of physical medicine and unfamiliar with the physiologic effects that may be expected of various types of physical therapy. This point is well illustrated by the following examples. In a series of 235 cases of chronic arthritis referred to a department of physical medicine, no less than 16 separate and distinct forms of treatment were suggested at the time of referral. In a group of 120 various types of extremity fractures, 11 separate procedures were advocated. In 34 cases of so-called subacromial bursitis 10 types of treatment were recommended and in 214 cases of muscular pain of undetermined origin, 15 different procedures were recommended. Thus, it is apparent that in the minds of many physicians there still exists considerable confusion over what constitutes effective physical therapy.

One of the most important functions of a department of physical medicine is to take care of patients whose treatment cannot be successfully managed without the help of special apparatus and the services of a carefully trained technical staff. There are many types of patients in this category who should be so referred by the general practitioner, if the best interests of these patients are to be served and they are to be afforded the type of treatment calculated to restore their self reliance and help them to return to a productive existence. Notable in this group may be mentioned severe and complicated fractures; certain instances of injuries to the peripheral nerves and tendons that require prolonged aftercare and exact muscle reeducation; injuries to the spinal cord resulting in paraplegia, of which so many examples are to be found among the returning veterans; cerebral palsy, and the more severe types of infantile paralysis with disabling residua. In these last three groups especially, reeducation often requires not only weeks but even years of continuous supervised treatment which can be adequately given only by those trained for the purpose.

There is one aspect of the treatment of every patient who requires reconditioning and convalescent care, regardless of how the disability was acquired, which must ever be kept in mind. Psychotherapy, although not strictly speaking a subdivision of physical medicine, plays as important a role in this type of treatment as it does in all other therapeutic procedures. Although an essential and integral part of all aspects of the practice of medicine, the proper psychologic approach is important to those who suffer from disabling and disfiguring disabilities and who have to learn to live with and use various artificial devices. In the management of every patient requiring reconditioning, proper psychologic treatment rests on coordinated effort and thorough understanding between the family, nurses, physical therapeutists and all physicians concerned in their care, especially the general practitioner. In every case of disability, regardless of when or how acquired, the patient sooner or later comes to depend chiefly on the family physician for help, guidance and encouragement. The physician's mental attitude is definitely reflected in the psychology of the patient. If he advises physical therapy with any doubt or skepticism, the effectiveness of the treatment is delayed and impaired because of the lack of enthusiasm and unwillingness to cooperate shown by the patient. On the other hand, reassurance and conviction on the part of the physician that the treatment is indicated and will be successful does much to enhance its value. The importance of inspiring patients with confidence should be borne in mind by every practitioner whenever his patients are referred for physical therapy. It not infrequently happens that physicians refer a patient for physical forms of treatment not because they believe in the inherent value of the treatment but because they are impelled to do something new for a troublesome patient whose progress is unsatisfactory. If, unfortunately, the patient gets an inkling of such a mental attitude on the part of the physician, those who are entrusted with the application of physical therapy are at the start handicapped by the necessity of overcoming a serious psychic barrier.

Those seeking information in regard to what physical medicine offers as a means of treatment often ask what type of patient and what kind of disorders are suitable for physical therapy, what are the most useful technics and what results may be expected? In order to find an answer to these questions, based not on general impressions but on factual data, my associate, Dr. Steven M. Horvath, assisted by Miss Mary C. Wenck, has just completed an analysis of the material that passed through the Department of Physical Medicine of the Hospital of the University of Pennsylvania between the first of June 1945 and the first of June 1946. Since this institution is a general hospital, which handles all types of patients both medical and surgical, inpatient and outpatient, representing almost every stratum of society, it is reasonable to suppose that the material derived from such a source approximates closely the type and distribution of patients that make up the general practice of the average physician in a large city. This would not be the case if the material studied came from a special hospital, that is, one dealing largely with military or industrial casualties or one devoted to children, orthopedic or neuropsychiatric patients. The total number of patients seen in the department during the past year was 1,239; 1,083 cases were new, representing approximately 90 new patients per month. One hundred and fifty-six cases were old and carried over from the preceding year. The patients were about equally divided between those referred from the outpatient clinics and those sent to the department from the semiprivate and private rooms and referred by outside physicians.

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[4] Wright, J.: The Physical Therapy Prescription, Physiotherapy Rev. 25: 22-27 (Jan.-Feb.) 1945.

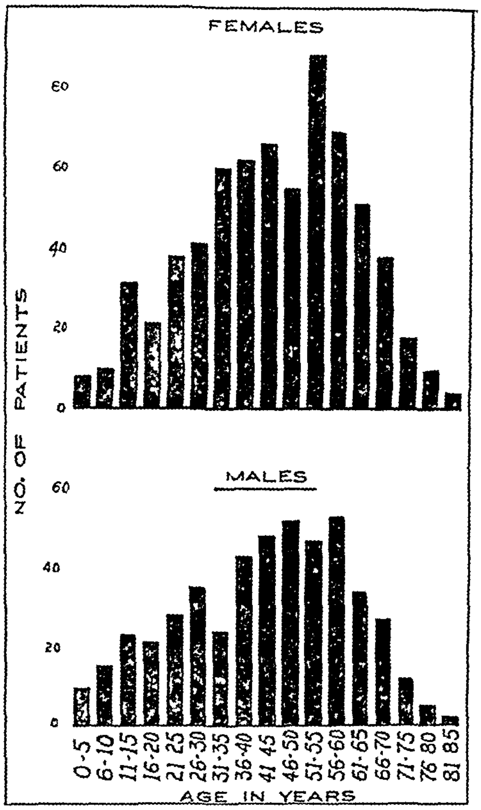

Chart 2.—Distribution by age and sex of the patients referred to the Department of Physical Medicine by all sources for one year, June 1, 1945 to June 1, 1946

The distribution by age and sex is shown on table 1 and on chart 2. There were 50 per cent more women treated than men. That physical therapy may be a useful adjunct to the treatment of patients of all ages is indicated by the fact that the age incidence ranged from 2 to 85 years. The small number of children handled is largely due to the fact that the bulk of the pediatric service at the University of Pennsylvania is carried on in a separate hospital for children. The experience of any general practitioner would undoubtedly include a greater number of young people. The number of patients in the seventh and eighth decades of life suggests that physical therapy in properly selected cases is not contraindicated in the older age groups. By far the greatest number of patients were between 40 and 65 years of age. This is the period during which the degenerative diseases such as arthritis and allied rheumatoid conditions, vascular disease, diabetes, chronic nephritis and diseases of the nervous system are most prevalent. Personal experience would lead one to believe that patients in this age group who are suffering from degenerative conditions constitute the bulk of the practice of the internist and the general practitioner.

Table 1.—*Age Distribution of Patients Treated in the Department of Physical Medicine, June 1945 to June 1946*

Age in Years	Men	Women	Totals *
0 5	9	8	17
6 10	15	10	25
11 15	23	31	54
16 20	21	21	42
21 25	28	38	66
26-30	35	41	76
31 35	24	60	84
36-40	43	62	105
41 45	48	66	114
46-50	52	55	107
51 55	47	88	135
56-60	53	69	122
61 65	34	51	85
66 70	27	38	65
71 75	12	18	30
76-80	5	10	15
81 85	2	4	6
Totals	478	670	1,148

* The age of 70 women and 21 men was unknown A total of 1,239 patients were treated, 156 being carried over from the previous year

Based on the referral diagnosis, it will be seen that 57 per cent of the conditions most often treated were represented by chronic arthritis, neuromuscular pains of undiagnosed origin, strains and fractures. The frequency of the twelve diagnoses most commonly submitted is shown in table 2. The frequency of chronic arthritis in women as compared with this incidence in men is one reason why the percentage of women was greater than that of men in the total patient load. On the other hand, as might be expected, disabilities due to trauma were more commonly found in men than in women. The great variety of conditions that were regarded as suitable for physical therapy is indicated by the 111 separate diagnoses submitted with 1,239 patients, counting all types of arthritis, fractures, back pain and strains as a single unit only.

Table 2.—*Twelve Most Commonly Submitted Diagnoses in Patients Referred for Treatment to the Department of Physical Medicine, June 1, 1945 to June 1, 1946*

Diagnosis	Number of Patients	Per Cent of All Patients *	Number of Methods of Treatment Given
Arthritis	235	19.0	16
Pain (undetermined origin)	214	17.3	15
Strains	133	10.8	12
Fractures	120	9.7	11
Bursitis	34	2.7	10
Hemiplegia or paraplegia	30	2.4	10
Postoperative	28	2.3	11
Scoliosis	22	1.8	8
Neuritis	22	1.8	9
Myositis	20	1.6	8
Bell's palsy	18	1.5	8
Posture difficulties	18	1.5	4

* There were 1,239 patients

Table 3, which shows the type and frequency of treatment given to patients with various diseases, leads to some interesting conclusions. A total of 23,345 treatments were given, representing 28 different types of procedure. As pointed out earlier, such simple forms of treatment as exercise, massage, baking and heat from infra-red lamps were overwhelmingly preponderant and represented 71.7 per cent of all the treatments given. This again emphasizes the observation that the majority of the conditions in which physical forms of treatment are useful adjuncts respond satisfactorily to those procedures which are most readily available to the general practitioner and require a minimum amount of elaborate apparatus. The large number of treatments over long periods that were required by many patients confirms the well recognized fact that in order to obtain good results physical forms of therapy must be used systematically over a considerable period, except in certain acute conditions, many of which often undergo spontaneous improvement rather promptly. It is unwise to lead patients to believe that cures can be effected by a few treatments or by occasional treatments given at long intervals. This is particularly true of the most frequently employed type of physical therapy, massage, whose effectiveness, as Pemberton[5] and others have pointed out, depends largely on its prolonged and systematic use.

TABLE 3.—*Analysis of the Treatments Given to Patients by a Department of Physical Medicine During a Twelve Month Period*

Type of Treatment	No. of Treatments	% of Total Treatments	% of Patients* Receiving Treatment	Treatments Given to Patient: Mean	Treatments Given to Patient: Range	No. of Patients Treated
Massage	7,966	34.0	72.7	8.8	1 - 82	901
Baking	5,292	23.7	54.6	7.8	1 - 70	676
Exercise	1,815	7.8	16.8	8.7	1 - 85	208
Infra-red	1,439	6.2	15.3	7.6	1 - 75	189
Short wave diathermy	1,266	5.4	14.6	7.0	1 - 43	181
Hubbard tank	1,243	5.3	5.6	17.7	1 -110	70
Exercise—passive	1,231	5.3	8.3	12.0	1 - 65	103
Suction and pressure	577	2.5	3.6	12.8	1 - 39	45
Whirlpool bath	411	1.8	4.5	7.3	1 - 37	56
	372	1.6	1.2	24.8	1 -120	15
	329	1.4	2.0	13.2	2 - 35	25
	313	1.3	2.0	12.5	1 - 57	25
	269	1.2	1.6	13.4	1 - 71	20
	165	0.7	1.2	11.0	1 - 83	15
Long wave diathermy	134	0.6	1.4	7.9	1 - 32	17
Heat—dry	121	0.5	0.3	30.2	3 - 32	4
Scotch douche	110	0.4	1.5	5.8	1 - 24	19
Packs—hot	106	0.5	0.2	53.0	0 - 83	2
Faradic stimulation	95	0.4	0.9	8.6	1 - 18	11
Luminous lamp	65	0.3	1.0	5.4	1 - 22	12
Iontophoresis	27	0.1	0.5	4.5	1 - 9	6
Inductance coil stimulation	21	0.1	0.2	10.5	3 - 18	2
Alcohol sponge bath	19	0.1	0.1	19.0	0 - 19	1
Contrast bath	13	0.1	0.2	4.3	1 - 8	3
Irrigation, high colonic	3	0.0	0.1	3.0	0 - 3	1
Fever therapy	3	0.0	0.1	3.0	0 - 3	1

* 1,239 patients received a total of 23,345 treatments.

The evaluation of any type of treatment is admittedly difficult and subject to error, especially when it is based on clinical impressions and the subjective statements of patients rather than on controlled objective observation. This is especially true of patients referred for physical therapy, the majority of whom, as in the present instance, were suffering from chronic diseases, in which the exact cause is not too well understood and the symptoms may spontaneously undergo long periods of remission. Furthermore, most patients while under observation received other forms of treatment along with physical therapy. In the evaluation of any special form of treatment one must reckon with the ever present and highly variable psychologic factor. With so many sources of error due to uncontrolled variables, no conclusions as to the comparative value of various forms of treatment are justified. Even impressions based on clinical observation are of little actual value unless they are checked by an efficient follow-up system, which should be instituted in every department of physical medicine if it is ever hoped to compile worthwhile data on the results of therapy.

The foregoing analysis leads one to accept as true the statement by Scull[6] that the nucleus of physical therapy as a whole is the quartet of rest, heat, massage and exercise, and that nothing has been added to these in principle since the days of the ancients except irradiation, involving roentgen rays and radium. Furthermore, the number and variety of the treatments leads to the conclusion that accurate knowledge of the relative value of the various forms of therapy and of the physiologic changes which they induce is still meager, and that empiricism continues to play too large a role in the prescription of physical forms of treatment. The solution of these problems awaits the further efforts of physiologists, biophysicists and biochemists to obtain by controlled observations a more exact appraisal of the comparative value of various types of therapy and the physiologic alterations which they bring about, not only in the experimental animal but, primarily, in man.

Physical medicine has progressed to a point at which it must be considered a separate and distinct medical specialty.[7] From this it may be logically concluded that the physician who has devoted time and special study to this subject may justly be regarded as a specialist in physical medicine, occupying a position comparable to that of others especially qualified in the various fields of medicine and surgery. It has recently been suggested that the term "physiatrist" be adopted as a suitable designation for doctors who are properly qualified in this specialty. If the practicing physician will avail himself of the experience and advice of the physiatrist in the same way as he avails himself of that of the roentgenologist, the gastroenterologist, the surgeon and other qualified specialists, suitable types of physical and occupational therapy can be instituted more efficiently in appropriate cases, thereby safeguarding the best interests of the patient, minimizing the loss of time and lessening the incidence of disappointing results which sometimes bring physical therapy into disrepute. On the other hand, the specialist in physical medicine must be aware of his obligations toward the referring physician. He should insist that the latter follow the case with him concurrently, he should advise with his colleague when changes of treatment are indicated, and when the case is concluded or further physical therapy is no longer desirable, the physiatrist should make sure that the patient returns to his original physician. Closer cooperation of this kind and better understanding between the general practitioner and the specialist in physical medicine must be fostered, if the large number of patients who need physical therapy are to receive the most effective treatment.

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[5] Pemberton, R.: Physiologic Influence of Massage, in Mock, H. E.; Pemberton, R., and Coulter, J. S.: Principles and Practice of Physical Therapy, Hagerstown, Md., W. F. Prior Company, Inc., 1934, vol. 1, chap. 6.

[6] Scull, C. W.: Massage: Physiologic Basis, Arch. Phys. Med. **26**: 159-167 (March) 1945.

[7] Krusen, F. H.: The Future of Physical Medicine, J. A. M. A. **125**: 1093-1097 (Aug. 19) 1944.

CANITIES AND ALOPECIA IN CHILDREN ASSOCIATED WITH AVITAMINOSIS

Preliminary Report

ANTONIO PEÑA CHAVARRÍA, M.D., San José, Costa Rica
LEON GOLDMAN, M.D., Cincinnati
C. SAÉNZ-HERRERA, M.D., San José, Costa Rica
and
E. CORDERO-CARVAJAL, M.D., San José, Costa Rica

In order to understand the so-called minimal or subclinical nutritional deficiency reactions observed in the United States, it is well to consider the severe or extreme reactions which may be observed elsewhere and especially in tropical America. At the Hospital San Juan de Dios in San José, Costa Rica, special attention has been given in the past three years to the study of changes in the hair of infants and young children with severe avitaminosis. Hair disturbances have been noted especially in the severe forms of vitamin A deficiencies, pellagra, riboflavin deficiency (cheilosis), nutritional edemas, beriberi and in the mixed forms of these general types. Such extreme hair disturbances have not been seen in the nutritional disturbances in the United States according to Blankenhorn,[1] Spies [2] and Vilter.[3] In the Medical Survey of Nutrition in Newfoundland,[4] note was made of a form of change in the hair, namely a dry, lackluster hair, so-called "staring hair." A number of South African investigators (Trowell,[5] Kark,[6] Williams,[7] the Gillmans [8] and their associates [9]) have described changes in the hair associated with severe nutritional diseases in children. According to Gillman and Gillman,[8a] Trowell [5] was the first to suggest that this nutritional deficiency syndrome observed by the various authors was probably infantile pellagra. Gillman and Gillman [8a] in Johannesburg, Union of South Africa, have done extensive work in that syndrome which they also call infantile pellagra. Clinically, this is "characterized by severe edema, typical cutaneous lesions, labial and angular stomatitis, glossitis, diarrhea or steatorrhea, peculiar depigmentation of the skin over the entire body and a graying of the hair of the scalp with varying degrees of alopecia." Williams [7] in work in the Gold Coast colony has emphasized that the changes of the hair are more noticeable when the child is older, "say of 4 years in whom the condition may have become chronic; or perhaps owing to occasional improvements in the diet, and the child has had a series of relapses and recoveries." The changes in the hair which all these authors describe are similar to those which we have observed not only in the syndrome described herein, which we, too, believe to be a form of pellagra, but also in children who presented decided follicular keratoses and angular stomatitis and occasionally glossitis with no other changes as well as in children who presented generalized edema with normal blood proteins, and with no other cutaneous or mucosal reactions. True beriberi in children has been observed in Costa Rica by Peña Chavarría and his co-workers, and these changes in the hair have been observed in such children. It is possible that the changes are similar to but more severe than the dry "staring" hair observed in Newfoundland. It is our opinion, then, that canities and alopecia may occur in children with vitamin deficiency syndromes other than that described by Trowell, Kark, Williams and Gillman and Gillman. This occurrence of canities and alopecia in children is a manifestation of deficiency disease. As Williams indicated, the more striking changes of pigmentation were observed in those children with chronic conditions. However, the syndrome, from a clinical aspect, is not caused by a deficiency of any of the well known vitamins such as nicotinic acid, thiamine, riboflavin or vitamin A. According to Vilter,[3] it may be related to a deficiency of one of the less well known members of the vitamin B complex. It is curious that no similar severe reactions of the hair have been observed in adult vitamin deficiency syndromes even of the extreme types which are found so easily in Central America. For adults, presumably, Savill [10] has indicated that "diseases of the intestinal canal in particular have in many cases hastened the onset of canities." She has reported, in a few instances, gradual improvement of the hair after improvement of the systemic condition.

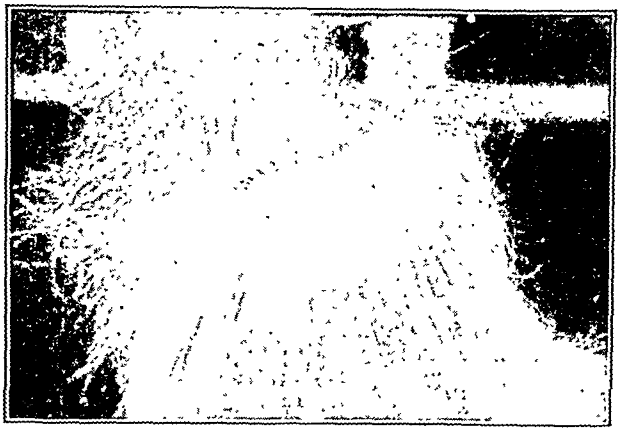

Fig. 1.—Return of pigment to the hair at proximal ends of shafts in a young girl previously ill of diarrhea and edema.

The changes in Costa Rica are observed for the most part in the hair of white and mestizo children.

These disturbances in the hair of children follow a similar pattern of development. The hair becomes dry, loses color, usually in toto, and is more fragile. It becomes loosened and is easily pulled out of the scalp. While talking to the child one can remove a handful of

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From the Department of Pediatrics of the San Juan de Dios Hospital, San José Costa Rica, Dr. E. Cordero-Carvajal, Dr. C. Saénz-Herrera (Chief of Service) and Dr. Antonio Peña Chavarria (Director) and the Department of Dermatology and Syphilology of the College of Medicine of the University of Cincinnati, Dr. Leon Goldman. Work started under a grant from the John R. and Helen Markle Foundation through the Association of American Medical Colleges, Dr. Henry E. Meleny, Chairman.

Biotin furnished by Merck & Co., Inc.

Dr. Marion Blankenhorn, Dr. Tom Spies and Dr. Richard Vilter made a critical survey of the preliminary study.

1. Blankenhorn, M.: Personal communication to the authors.
2. Spies, T. D.: Personal communication to the authors.
3. Vilter, R.: Personal communication to the authors.
4. Adamson, J. D.; Joliffe, N.; Kruse, H. D.; Lowry, O. H.; Moore, P. E.; Platt, B. S.; Sebrell, W. H.; Tice, J. S.; Tisdall, F. F.; Wilder, R. M., and Zamecnik, P. C.: Medical Survey of Nutrition in Newfoundland, Canad. M. A. J. **52**: 227, 1945.
5. Trowell, H. C., quoted by Gillman and Gillman.[8]
6. Kark, S. L., quoted by Gillman and Gillman.[8]
7. Williams, C. D.: A Nutritional Disease of Childhood Associated with a Maize Diet, Arch. Dis. Childhood **8**: 423, 1933.
8. (*a*) Gillman, T., and Gillman, J.: Powdered Stomach in Treatment of Fatty Liver and Other Manifestations of Infantile Pellagra, Arch. Int. Med. **76**: 63 (Aug.) 1945. (*b*) Gillman, T., and Gillman, J.: Infantile Pellagra, J. A. M. A. **129**: 12 (Sept. 1) 1945.
9. Gillman, T.; Gillman, J.; Ingles, J.; Friedlander, L., and Hammar, E.: Substitution of Whole Stomach Extract for Vitamins in the Treatment of Infantile Pellagra, Nature, London **154**: 210 (Aug.) 1944.
10. Savill, A.: The Hair and Scalp, London, Edward Arnold & Co., 1935, p. 31.

hair without any pain or discomfort to the child. In some instances, the spontaneous loss of hair has been more pronounced over the frontal area and has produced on the sides the so-called "professor's corners" and in front the widened forehead, both characteristic of the idiopathic baldness in the adult.

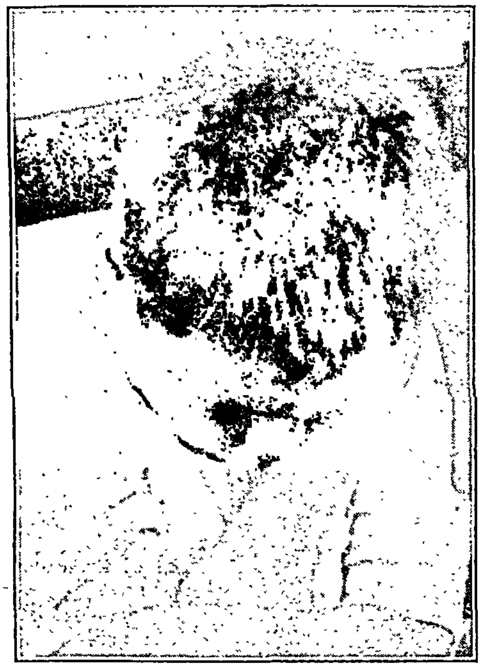

Fig. 2.—More advanced stage of return of growth and pigment in the hair of a young boy who had had follicular keratoses, angular stomatitis and glossitis.

The more interesting changes are those of depigmentation varying from slight graying of the hair to intense whiteness. This color change is diffusely spread throughout the scalp. With gradual improvement over a period of weeks to months, the pigment of the hair returns first at the scalp attachment and rapidly spreads through the shaft of the hair. The return of pigment in attached hairs may be more rapid than the return of growth in bald areas. Selected hairs were mounted and studied microscopically. The most striking feature was the depigmentation and hypopigmentation of the distal portions of the hairs. The change was gradual and was associated with spotty absence and lessened intensity of the medulla with diminishing color of the cortex, so that the distal portions of the hair presented a pale yellow, waxy appearance with only a faint trace of the medulla, only a few recognizable granules of pigment and many air spaces. The diameter, unmeasured, of the distal portions appeared lessened. The proximal portions of the hair appeared normal. Subsequent examinations of these hairs under the polarizing microscope were negative. For comparison, microscopic studies were made of the hair of a 6 year old white child with premature canities of familial origin. Biotin therapy over a period of three months had no effect on the pigment. The hair, grossly, was coarse, thin and inelastic and was entirely white. Some hairs showed bits of distal pigmentation. Under the microscope the hair showed a few scattered granules of pigment at the roots and cortex. The medulla was colorless. In general, the chief differences between these hairs and the hairs associated with the nutritional defects were that the former were coarser and harder. Sample

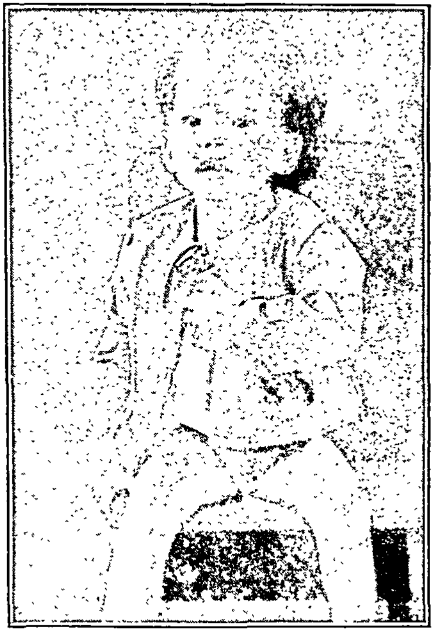

Fig. 3.—Frontal alopecia with slight canities in a child with cirrhosis and generalized edema.

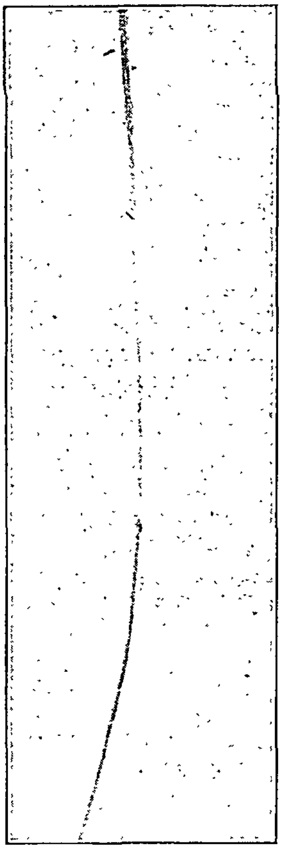

Fig. 4.—Hair of boy in figure 2 adjacent to the zone of depigmentation; the diameter had diminished, the medulla was indistinct and absent and the pigment granules in the cortex were sparser and lighter; × 10.

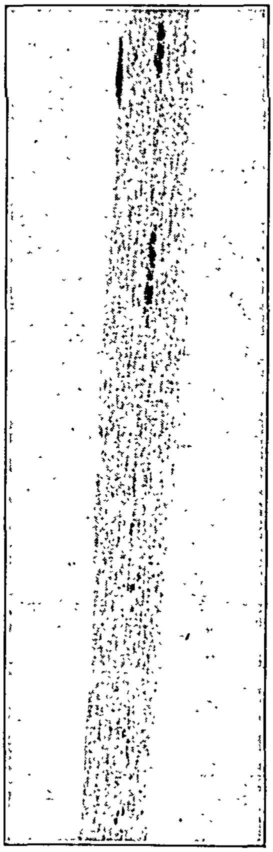

Fig. 5.—Hair of boy in figure 2 at the zone of depigmentation; the medulla is seen to be less pronounced, lighter in color and absent in portions, the pigment granules are less intense in color and more scattered. Some air spaces are also present. × 160.

hair from children in Costa Rica with the hair disturbances has been taken now and then to illustrate the progress of the return of pigment, but no controlled time measurements of growth were taken. Except for microscopic examinations, no special studies thus far have been made of these hairs. The scalp revealed slight pityriasis but no seborrheic dermatitis. Changes were observed sometimes in the eyebrows and eyelashes. As mentioned previously, associated cutaneous changes varied from normal skin to severe follicular keratoses and severe pellagrous dermatitis.

In general, records of the food intake of the children who exhibited such hair disturbances indicated a diet that consisted chiefly of bananas and molasses. Detailed analyses of the diets of these children will be published in subsequent reports.

In an effort to understand the background of these changes in the hair which would recede with improvement in the patient's general condition, various fractions of vitamin B complex were given in an uncontrolled fashion to the children. It had been observed previously that the hospital diet had effected a cure, unless the patient died shortly after admission or presented such severe reactions as diarrhea, edema, hepatosis or cirrhosis when the parenteral use of the vitamin fractions was necessary. Originally it had been planned to attempt to study the addition of such specific substances as inositol, calcium pantothenate, para-aminobenzoic acid and choline, alone and together with other fractions of the B complex. However, in addition to usual routine therapies biotin, without assay studies, was given orally, usually in doses of 0.25 mg. two or three times a day. With the addition of biotin, the return of both pigment and growth of the hair appeared to be accelerated definitely over that observed on a hospital diet or a hospital diet plus thiamine plus nicotinamide and other vitamins. These studies have been wholly uncontrolled; hence, the assumption of the more rapid action of biotin *is purely an opinion and not a proved fact.* Since similar cases of interesting changes in the hair are still available for additional studies, an effort will be made to determine, with due allowance for individual variations, the comparative accelerative effect of the various fractions of the B complex group.

CONCLUSIONS

In Costa Rica infants and young children with severe avitaminosis, especially vitamin A deficiency, pellagra, riboflavin deficiency, beriberi, nutritional edemas or mixed avitaminosis syndromes, have been observed to exhibit characteristic associated changes in the hair, both loss, diffuse or especially pronounced in the frontal area, and depigmentation. These changes in the hair resemble those reported previously by Trowell, Kark, Williams, Gillman and Gillman and others in the syndrome of infantile pellagra in South Africa. These changes are easily reversible if the patient survives the severe vitamin deficiency state. Improvement may be produced by a general, adequate diet if it is utilized alone or together with polyvitamin mixtures of the B complex.

The addition of biotin is thought, but not proved, to accelerate over other therapies the return of normal growth and pigmentation to the hair. Similar severe changes were not observed in the hair of adults with decided vitamin deficiency syndromes.

Clinical Notes, Suggestions and New Instruments

THE CONTROL OF BLEEDING DURING OPERATION BY INDUCED HYPOTENSION

W. JAMES GARDNER, M.D.
Cleveland

The olfactory groove meningioma is a benign tumor which arises from the midline of the floor of the anterior fossa of the skull, and its removal is beset with difficulties for the following reasons: First, the location of the tumor renders it relatively inaccessible; second, it is a large and vascular growth; third, its nutrient vessels come up through the base of the skull so that they are difficult to control until after the tumor is removed.

The best method of dealing with these tumors is to perform a right frontal craniotomy and to excise the portion of the right frontal lobe overlying the lateral aspect of the growth. With the electrosurgical unit the tumor is then removed in fragmentary fashion, after which the nutrient vessels in the floor of the skull at its area of attachment are treated by application of the cautery and bone wax. The loss of blood during operation may be severe. In many cases the surgeon makes extremely slow progress with the removal of the tumor until the patient's blood pressure falls as the result of loss of blood. After this occurs, bleeding from the cut surface of the tumor can be readily controlled, and the removal of the tumor goes on apace.

This was well illustrated by a patient who was operated on recently. The operation required three hours. In the first two hours less than one third of the growth had been removed. At this point the blood pressure fell from 130 to 80 because of loss of blood. Thereafter hemostasis was more readily effected, and the remainder of the tumor was quickly removed. Bleeding from the nutrient vessels coming up through the floor of the skull was then easily controlled by electrocautery, bone wax and pledgets of cotton soaked in thrombin solution. The patient received 1,500 cc. of blood during the operation, despite which the hemoglobin fell from a preoperative level of 12 Gm. to 8.9 Gm. forty-eight hours later.

For some years I have entertained the idea of lowering the patient's blood pressure by venipuncture during the first stage of these operations in order that bleeding from the tumor might be more readily controlled. Afterward the patient's own blood could be returned instead of transfusing blood from a donor. This method, however, has not been actually employed.

Kohlstaedt and Page[1] in 1943 in experiments with dogs described an ingenious method for the study of shock by arterial bleeding and infusion. Briefly, this method consists in placing a cannula in the femoral artery directed toward the heart. This cannula leads to a closed reservoir into which the dog is bled until the blood pressure is lowered to 30 mm. of mercury. The blood is mixed with an anticoagulant during its withdrawal. The arterial pressure is recorded on a kymograph. To raise the blood pressure the blood is infused into the femoral artery by the simple expedient of raising the pressure in the closed reservoir by pumping air into it.

This method permits the investigator to reduce the blood pressure to any desired level, hold it there as long as desired and then bring it back by infusion of the removed blood, provided, of course, that the animal is not permitted to go into terminal shock. In the treatment of hemorrhagic shock these authors found intra-arterial infusion more effective than intravenous.[2]

Page[3] found that the intra-arterial infusion method for the treatment of shock has several advantages. "(1) The delivery

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1. Kohlstaedt, K. G., and Page, I. H.: Hemorrhagic Hypotension and Its Intra-Arterial and Intravenous Infusion of Blood, Arch. Surg. **47:** 178-191 (Aug.) 1943.

2. Glasser, O., and Page, I. H.: Prognostic Signs in Experimental Hemorrhagic Shock, Cleveland Clin. Quart. **13:** 125-127 (July) 1946. *Kohlstaedt and Page.*[1]

3. Page, I. H.: Vascular Mechanisms of Terminal Shock, Cleveland Clin. Quart. **13:** 1-8 (Jan.) 1946.

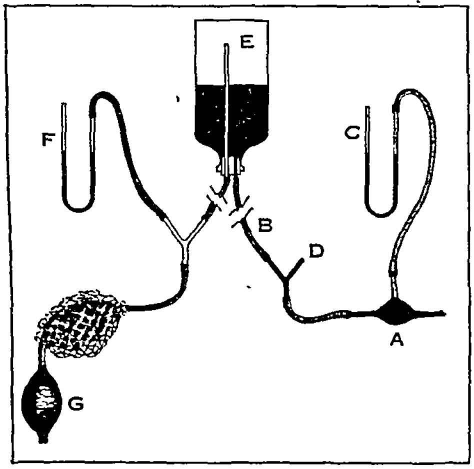
of blood into the aorta perfuses the coronary vessels, relieving myocardial ischemia and, since myocardial ischemia probably underlies the cardiac dilatation and insufficiency, places the heart rapidly in a state in which it can pump the infused blood to other areas; (2) when, before the infusion, the patient may have been apneic, at its start he will take a deep breath, as if the arterial filling had rapidly extended to the vital medullary centers; (3) in contrast with intravenous transfusion, blood pressure is rapidly restored. . . ."

In its effect, therefore, intra-arterial infusion of blood may be said to furnish the patient in shock with an accessory heart.

REPORT OF CASE

On April 3, 1946 a woman aged 49 presented herself with a complaint of blindness. She was 5 feet 2 inches (157.5 cm.) tall and weighed 280 pounds (127 Kg.). The history showed loss of sense of smell for one year. Dizzy spells began in June 1945, and it was discovered at that time that she had hypertension. In November she experienced a period of unconsciousness lasting two days, followed by frequent severe headaches and rapid failure of vision.

On examination the blood pressure was 200/130 mm. of mercury, which fell to 170/100 with rest in bed. The patient was tremendously obese, and there was bilateral optic atrophy with papilledema. She was able to see fingers with the right eye at 6 inches, and the left eye was totally blind. The sense of smell was completely absent. Roentgenologic examination of the skull showed some erosion of the posterior clinoid processes. The spinal fluid pressure was 450 mm. of water. The fluid contained 170 mg. of protein per hundred cubic centimeters. There was no evidence of renal failure. The possibility of malignant hypertension was at first entertained, but the diagnosis of olfactory groove meningioma soon became apparent.



Page procedure for induced hypotension. *A*, cannula in left dorsalis pedis artery; *B*, arm to reservoir to receive arterial blood; *C*, arm to manometer; *D*, arm to syringe with heparin solution; *E*, air space above the blood connected to *F*, another manometer, and to *G*, a rubber bulb by means of which the pressure in *E* is raised or lowered at will.

Operation was performed on April 19. With the patient under pentothal sodium anesthesia, a cannula (*A* in the illustration) was placed in the left dorsalis pedis artery directed toward the heart. One arm (*B*) of this glass cannula led to the closed reservoir to receive the arterial blood. Another arm led to a blood pressure manometer (*C*), and a third arm (*D*) to a syringe containing heparin solution. The air space (*E*) above the blood in the reservoir was connected to another manometer (*F*) and to a rubber bulb (*G*) by means of which the pressure in the air space above the blood could be raised or lowered at will. Screw or pinch clamps were used at strategic positions to control the flow of blood.

While the scalp incision was being made, 1,600 cc. of blood was allowed to flow rapidly into the reservoir, and in fifteen minutes the intra-arterial pressure fell from 140 mm. of mercury to 100. The pulse rate, which was 130 before bleeding, rose to 140. A right frontal craniotomy was performed, and the frontal lobe was elevated on a retractor. A large, soft, vascular meningioma was disclosed attached to the floor of the anterior fossa near the midline. In order to improve the surgical exposure the lower portion of the frontal lobe overlying the tumor was removed by block resection. The tumor was then removed in fragmentary fashion with the electrosurgical unit and by digital enucleation. The anterior portion was found to have straddled the crista galli and lower portion of the falx. Its posterior portion caused pressure on both optic nerves.

The tumor was extremely vascular, but despite this there was little loss of blood during the procedure. When arteries were divided, bleeding could be readily controlled by application of the electrocautery. In addition, it was noted that the blood clotted quickly, and the clot was quite firm. After removal of the growth the nutrient vessels in the floor of the skull at the area of the attachment of the tumor were readily controlled by electrocautery, and it was not necessary to use thrombin solution or bone wax to complete the hemostasis.

The pressure in the reservoir was then increased, and the patient's blood was infused into the dorsalis pedis artery. The operator waited until 1,100 cc. of blood had been infused before closing the wound. The infusion raised the intra-arterial pressure from 90 to 120 mm. of mercury and resulted in some bleeding from the scalp incision but none from the tumor bed. The wound was then closed.

When the patient arrived at the ward the pulse was 120 and the blood pressure 150/100 mm. of mercury. The tumor in this case was removed more satisfactorily and with less bleeding than in any other case in the operator's experience. The total operating time was two hours and thirty-five minutes. The actual operating time was less, because the operation was suspended for about thirty minutes to watch for recurrence of bleeding in the tumor bed during the arterial infusion. The last 500 cc. of blood in the reservoir was discarded because it had clotted as a result of insufficient heparin solution. Despite this the hemoglobin on the fourth postoperative day was only reduced to 12.0 from a preoperative level of 13.3 Gm. Convalescence was smooth except for an unexplained low grade fever which persisted for eight days after operation. Because of this fever the patient was not discharged until the thirteenth postoperative day. She was last seen ten weeks later, at which time her progress was quite satisfactory. The vision was improving, and the blood pressure was 180/100 mm. of mercury.

The experience with this method in this 1 case, therefore, was certainly encouraging, and it seems that the procedure should be given a further trial.[4]

COMMENT

Page [3] has shown that peripheral vasoconstriction is an early and constant accompaniment of shock. He has shown that during and for a short time after the initiation of shock this vasoconstriction is neurogenic due to vasomotor reflexes. As the brief period of nervous irritation passes off and unfiltrable substance appears in the plasma, which, when injected into the vessels of an isolated perfused rabbit's ear, causes severe and prolonged vasoconstriction. Thus, there is good reason to believe that the persistent nonneurogenic vasoconstriction in shock is due to the appearance of this substance in the blood. Evidence indicates that it is neither of renal nor of adrenal origin but arises from the site of tissue injury. We believe that it was chiefly this peripheral vasoconstriction rather than the reduction of blood pressure which was responsible for the ease with which hemostasis was obtained in the case reported. It is not necessary to reduce the blood pressure to a dangerously low level in order to bring the peripheral vasoconstrictor mechanism into play.

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[4] Since its use in this original case the Page procedure or a modification of it has been employed in 6 additional cases with similar gratifying results.

SUMMARY

Hemostasis was aided during operation for brain tumor by preoperative arterial puncture and blood letting. The patient's blood was returned intra-arterially at the conclusion of the operation, thus avoiding the necessity of giving a transfusion.

DIFFUSE CALCIFICATION OF THE PANCREAS

FRANKLIN R NUZUM, M D.
Santa Bārbara, Calif.

The presence of stones within the ducts of the pancreas has been recorded in the literature in 220 instances up to the year 1944.[1] Diffuse calcification of the pancreas differs, in that the process of calcification is distributed throughout the organ, with associated destruction of the parenchyma. The organ may contain many cysts of varying size and much connective tissue; it may resemble a "bag of stones."[2] Beling[3] collected 12 reports of diffuse calcification and added 1 of his own. He and his associates later added another.[4] King and Waghelstein[5] reported 4 instances of this disease. Reviewing the reports of Beling they disagreed with the diagnosis in 2 cases which they thought were questionable. Darling[6] recorded an instance of diffuse calcification of the pancreas observed in Australia. The case herewith reported brings the number to 18

REPORT OF CASE

First Admission.—History: A white man aged 23 was admitted to the Santa Barbara Cottage Hospital in September 1944, referred to me by Dr. Artemas Strong of Santa Paula. Three years before he had been seized with "quite severe" epigastric pain over the upper half of the abdomen, associated with nausea, vomiting, diarrhea and a "low fever." He was ill for seven days. Over a period of two years similar pains occurred every four to six weeks; their duration was five to seven days. The only difference was the absence of diarrhea after the first attack. During the third year of his illness the "spells" occurred each four weeks. In 1942 a diagnosis of duodenal ulcer had been made elsewhere and confirmed by roentgen ray. He was placed on a plain diet with milk. His pain continued.

On hospitalization in August 1944 he stated that he was nauseated by all foods excepting bouillon and so had taken only that. His weight in six months had gone from 143 to 118 pounds (65 Kg. to 54 Kg.), a loss of 25 pounds (11 Kg.). His height was 5 feet 4 inches (163 cm.). He had been having daily two loose, not watery, dark brown stools. The urine was straw colored. Jaundice had not been observed.

For the past two years he had been a sprayer in a lemon orchard, using arsenate of lead. He smoked half a package of cigarets a day and used alcohol regularly, occasionally becoming intoxicated.

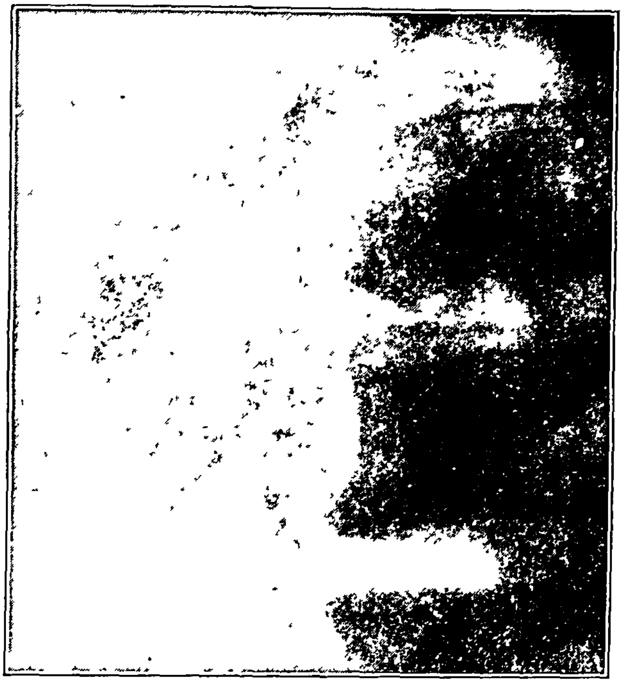
Examination: Examination revealed a dehydrated, acutely ill man, who seemed older than his 23 years. The tongue was dry and red, the gums boggy and bleeding and the teeth in need of repair. A lead line was absent The blood pressure was 122 systolic and 70 diastolic. The abdomen was moderately distended; there was much tenderness throughout the upper quadrant and the left lower quadrant. Rebound tenderness was present over the left upper quadrant. The temperature was 100 F. the first day after admission, 99 F. the second and normal or lower thereafter.

Laboratory Observations: On examination of the blood, the sedimentation rate was 20 mm in sixty minutes (Cutter); hemoglobin 77 per cent (11.7 Gm.); erythrocytes 3,600,000; leukocytes 7,800, with polymorphonuclears 82 per cent and lymphocytes 18 per cent. No basophilic punctation was found The stools were loose and dark brown, with 4 plus occult blood present.

Roentgenologic Observations: The stomach was dilated and contained fluid. The duodenal bulb was decidedly irritable and retained its barium poorly. There was pronounced segmentation of the barium mixture in the jejunal coils. After four hours there was a 60 per cent retention of barium in the stomach. The diagnosis was obstructive duodenal ulcer, deficiency state. Films of the right upper quadrant after the oral administration of priodax showed a well filled gallbladder; adequate contraction occurred under the stimulus of a fat meal. There was no evidence of calculus.

Treatment: The patient was placed on Sippy ulcer management, and he returned home.

Second Admission—History: He was readmitted to the hospital four months later, at which time he stated that after the institution of ulcer management he was free of symptoms for four weeks Pain then recurred; it started on the left side of the abdomen in the upper quadrant, radiating downward on the same side of the abdomen and down the inner side of the leg. The pain was constant, with exacerbations of severe pain which required hypodermics of morphine sulfate for relief. When not given the drug the patient walked and moved about continuously. If he sat in the same position for fifteen minutes the pain returned He also complained of constant tenderness in the left side of the abdomen His appetite was poor, and he had been nauseated and had vomited every morning for the past month.



Shadows indicating calculi in the head of the pancreas and extending across the spine into the tail

Examination: Persistent spasm was present on the left side in both the upper and lower quadrants of the abdomen, most pronounced over the left upper quadrant. The oral temperature varied from 99 to 99.2 F

Laboratory Observations: The laboratory work on this admission included examinations of the blood. The sedimentation rate (Cutter) was a 5 mm fall in 60 minutes; amylase 68 units; nonprotein nitrogen 25 mg. per hundred cubic centimeters; hemoglobin concentration 90 per cent (15.1 Gm. per hundred cubic centimeters); erythrocytes 4,500,000, and leukocytes 6,300. The percentages of the various types of leukocytes were eosinophils 4, monocytes 8 lymphocytes 26 and polymorphonuclears 62 A glucose tolerance test gave a fasting blood sugar of 94, first hour 190, second hour 195, and third hour 99 The urine contained 8 per cent, or 2 4 Gm of sugar in the second hour specimen and 0 5 per cent (0 67 Gm) in the third hour

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[1] Jaleski, T. C.: Pancreatic Lithiasis, Ann. Int Med. **20:** 940 (June) 1944.

[2] Pasternack, J. G: Calcereous Pancreatitis Report of Three Cases with Autopsies, Ann. Int. Med **19:** 757 (Nov.) 1943.

[3] Beling, C. A.: Calcification of the Pancreas, Am. J. Digest. **7:** 231 (June) 1940.

[4] Beling, C A, Baker, C F, and Marquis, W. J.: Pancreatic Calcification, Radiology **38:** 188 (Feb) 1942

[5] King, A. B, and Waghelstein, J. M. Calcification of the Pancreas, Arch. Int Med. **69:** 165 (Feb) 1942.

[6] Darling, H. C. R. A Case of Progressive Calcification of the Pancreas Secondary to Chronic Relapsing Pancreatitis, M. J. Australia **2:** 7 (July 4) 1942.

Roentgenologic Examination On a flat plate, throughout the bed of the pancreas there were multiple calcium shadows, indicating calcification within that region These shadows were present at the examination of Aug 15, 1944, at which time they were not recognized

Treatment The patient required frequent hypodermics of morphine sulfate, and it was evident that he needed help At operation, the distal two thirds of the pancreas was extirpated, leaving the head, which still was the seat of diffuse calcification The portion of the gland removed was the site of cysts of variable size up to 1 cm in diameter Two of these were definite abscesses

Histologic Observations On histologic examination of decalcified tissue, only a few small islands of normal pancreatic tissue were found The bulk of the organ had been replaced by dense hyaline connective tissue Between the hyaline connective tissue in many instances there were isolated islands of Langerhans

COMMENT

The etiology of calcification of the parenchyma of the pancreas is not known, although the rate of development of the calcification may be rapid King and Waghelstein[5] reported a definite increase in the amount of calcium deposited in 1 instance in eighteen months In about half the cases reported there was disease of the gallbladder with stones Beling, Baker and Marquis[4] stated that calcification follows repeated attacks of pancreatitis Pasternack[2] regards parenchymal calcification as a sequel to infection, inflammation and necrosis, quoting from the work of Edmondson and Fields[7] The role of alcoholism, apart from its apparent frequency, is speculative Like chronic gallbladder disease, it was a factor in about half of the reported instances of diffuse calcification of the pancreas Leroy Brooks[8] in a large general hospital has observed the frequence occurrence of acute pancreatitis after bouts of alcoholism in chronic alcoholic addicts William Russell[9] believes that the most likely explanation is that it represents a flare up of a healed acute pancreatic necrosis

There is no clear-cut symptom complex suggesting diffuse calcification of the pancreas Epigastric pain is the most constant symptom It may be mild or severe, intermittent or constant It may radiate to the back, to either shoulder or down into the abdomen In this patient, the pain was present in the upper half and in the entire left side of the abdomen Frequent bulky, pale stools with large amounts of fat and undigested meat fibers have been recorded This was not observed in the case reported here, and yet the pancreas was extensively diseased

Evidence of disturbed carbohydrate metabolism has been described in 45 per cent of the reported instances If glucose tolerance tests had been made in all cases, the incidence would undoubtedly have been higher Yet there is no apparent relation between the degree of destruction of pancreatic tissue and the altered carbohydrate metabolism The blood calcium level was 10 mg in this patient In some few reported instances the level has been lowered

Subsequent to operation the patient has remained free of pain Diabetes has not developed The irritability of the duodenal bulb undoubtedly resulted from pancreatic irritation

SUMMARY

Only 17 cases of diffuse calcification of the pancreas have been reported to date It is unlikely that this disease is so unusual It should be considered in the diagnosis when diffuse abdominal pain is present, and particularly when a history of repeated bouts of pancreatitis is given Roentgenologic examination of the abdomen before the ingestion of a barium meal will prove the diagnosis

Our patient made an uneventful recovery after the removal of the distal two thirds of the pancreas, and diabetes has not developed

The absence of diabetes even in the presence of widespread destruction of the gland is not incompatible with present day knowledge of the physiology of the pancreas, according to Gomori[10]

CYLINDROMA

Report of an Unusually Extensive Case

DAVID L COOPER, M D
Erie Pa

Cylindroma is a rare cutaneous affliction In the most comprehensive article on the subject written in 1933, Ronchese[1] stated that "up to 1932, only 31 fully developed cases were reported Of these, 19 occurred in females and 12 in males Since 1933, several other cases have been reported, some of which will be cited later However, it is doubtful whether more than 50 cases have been reported in all medical literature Without doubt some cases have been seen which have not been reported

The lesions of cylindroma usually occur on the scalp in the form of pink or bluish mushroom-like or pedunculated or lobulated tumors, varying in size from that of a pea to that of an apple Occasionally they are found on the extremities and trunk, there they lose their pedunculated character and appear to be embedded in the subcutis They may be of different consistency and feel firm or rubbery to the touch They often occur in several members of the family through one or more generations, they grow very slowly and are practically always benign The patients are usually in good health and in most cases are not greatly inconvenienced

NOMENCLATURE

Various synonyms have been used to describe these lesions Ronchese[1] called them multiple benign epithelioma He thought that "multiple benign familial, nodular, turban-like basal cell epithelioma of the scalp with cylindromatous degeneration" was the most complete and clear name but too long He believed that "turban tumor" was the shortest and best I believe that 'turban tumor" is the most descriptive but not the most appropriate name, for while the term 'turban" does accurately describe the Turkish headdress-like appearance of the lesions on the scalp, it does not describe the isolated and grouped lesions which may occur on the face neck extremities and body, moreover, the lesion should not be called a tumor because histologically it is a nevus growing from embryonal rests and developing later in life

Other names have been proposed Cohn[2] reported the disease of his patient as a case of multiple sarcoma Stillians[3] and Zakon[4] called it nevoepithelioma adenoides Jones, Alden and Bishop referred to their case as turban tumor or sweat gland carcinoma Gabarro[6] who reported the most extensive case in medical literature gave it still another name—epithelioma adenoides cysticum.

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[7] Edmondson H A and Fields, I A Relation of Calcium and Lipids to Acute Pancreatic Necrosis Arch Int Med **69:**177 (Feb) 1942

[8] Brooks L Personal communication to the author

[9] Russell, W Personal communication to the author

[10] Gomori G The Histology of the Normal and Diseased Pancreas, Bull New York Acad Med **21** 99 (Feb) 1945

[1] Ronchese, F Multiple Benign Epithelioma of Scalp (Turban Tumors), Am J Cancer **18** 875 (Aug) 1933

[2] Cohn I E A Case of Multiple Sarcoma, J Cutan & Genito Urin Dis **10**· 593 1892

[3] Stillians A W Nevo Epithelioma Adenoides (Cylindroma) of the Scalp Arch Dermat & Syph **27** 481 (March) 1933

[4] Zakon S J Naevo Epithelioma Adenoides (Cylindroma) of Scalp Arch Dermat & Syph **40:**945 (Dec) 1939

[5] Jones, J W Alden H S and Bishop F I Turban Tumor or Sweat Gland Carcinoma So Called Epithelioma of the Scalp, Report of a Case Illustrating Its Epithelial Structure Arch Dermat & Syph **26**· 656 (Oct) 1932

[6] Gabarro P An Enormous Epithelioma Adenoides Cysticum of the Scalp, Brit J Surg **33:**188 (Oct) 1945

The disease has been referred to variously by other terms—syringoma, syringocystadenoma, plexiform sarcoma, angiosarcoma, endothelioma capitis and tomato tumors.

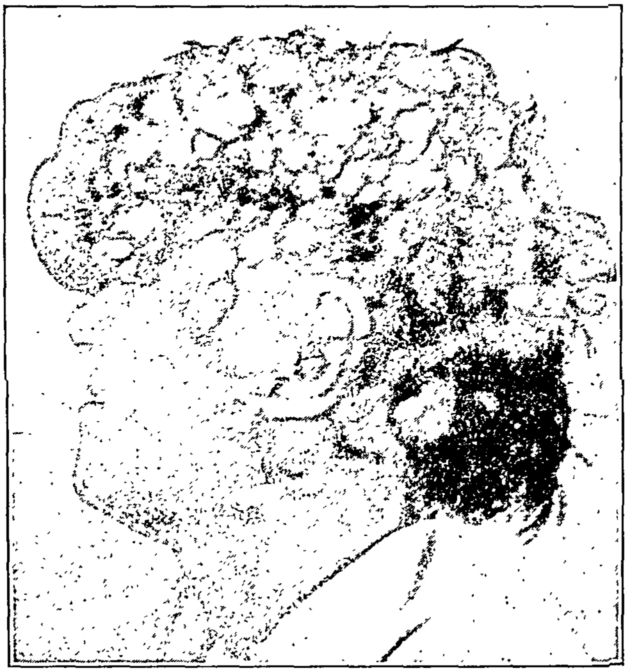


Fig. 1.—Lateral view showing grapelike and tomato-like appearance of lesions. Note involvement of the ear and neck as well as of the scalp.

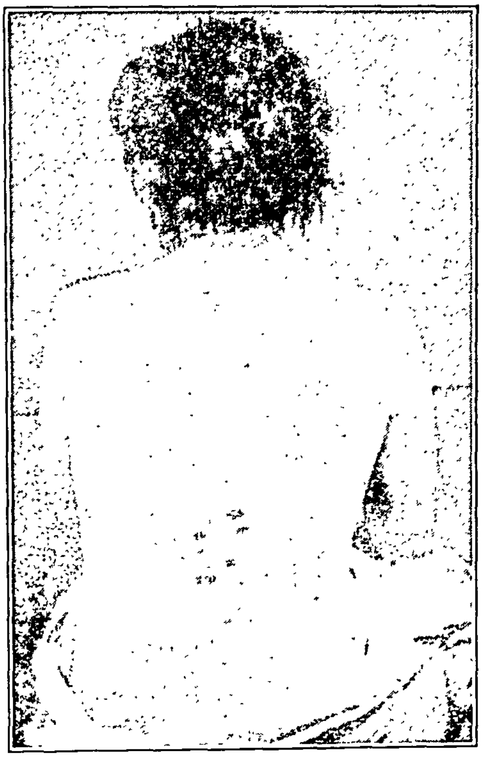


Fig. 2.—Rear view showing involvement of the back of the scalp with a small group of lesions on the lower portion of the back.

PATHOGENESIS

The lesions have been regarded as basal cell epithelioma by Frieboes, Watanabe, Hoffmann and others. Ricker and Schwab

satisfactory explanation of their origin is that they arise from the pilosebaceous system, particularly from the epithelium of sebaceous glands.

DIAGNOSIS

The diagnosis of cylindroma is fairly easy. The onset is usually early in life and may follow trauma. The lesions become fully developed in later life (40 to 70). They grow and multiply slowly. Usually other members of the family are similarly afflicted, particularly the women. The general health is good and complaints are absent except for the unsightly appearance and foul-smelling secretion.

There are several conditions which may be confused with cylindroma:

1. Sebaceous cyst. These are usually solitary and are covered by pale or normal skin. They are spherical in shape and are not lobulated or pedunculated.

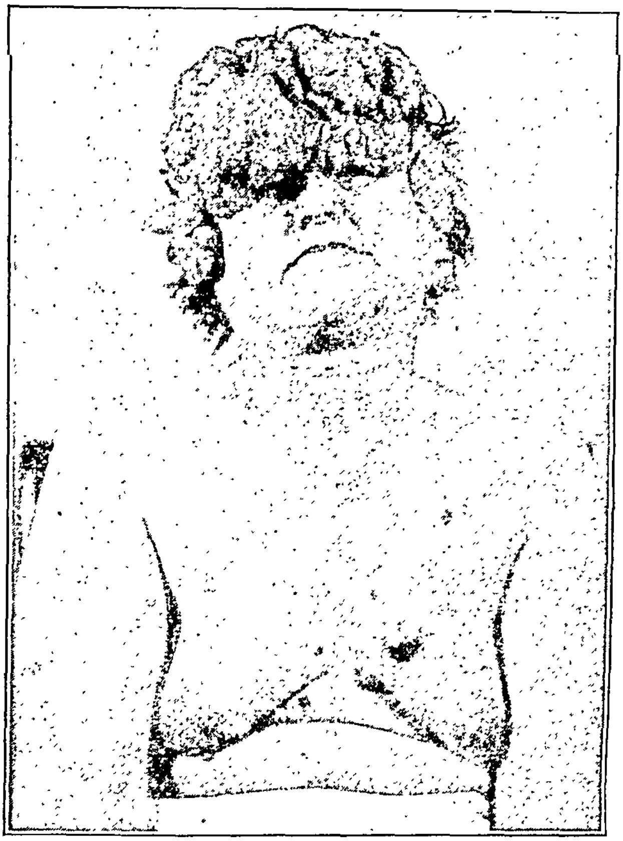


Fig. 3.—Anterior view showing extensive involvement of the scalp with solitary lesions on the breasts and the upper part of the abdomen. The large lesion overhanging the right eye and the smaller lesion on the left breast were removed for biopsy.

2. Endothelioma capitis. Biopsy will distinguish this disease from cylindroma.

3. Neurofibromatosus (von Recklinghausen's disease). The diagnostic feature of a neurofibroma is the fact that it may be invaginated through a ring in the skin but will spring back when released. There is only a 17 per cent hereditary factor in von Recklinghausen's disease, whereas almost all cases of cylindroma give a history of involvement of other members of the family.

TREATMENT

If they are not too extensive, the lesions may be removed by electrodesiccation or surgical excision. When there is extensive involvement, as in the patient described by Gabarro,[6] radical surgical removal followed by a plastic repair may be successfully employed. Roentgen rays are not of value against this disease.

REPORT OF CASE

The following case of cylindroma is reported because (1) it is believed to be the most extensive case ever reported in American medical literature, and (2) surgical intervention was refused.

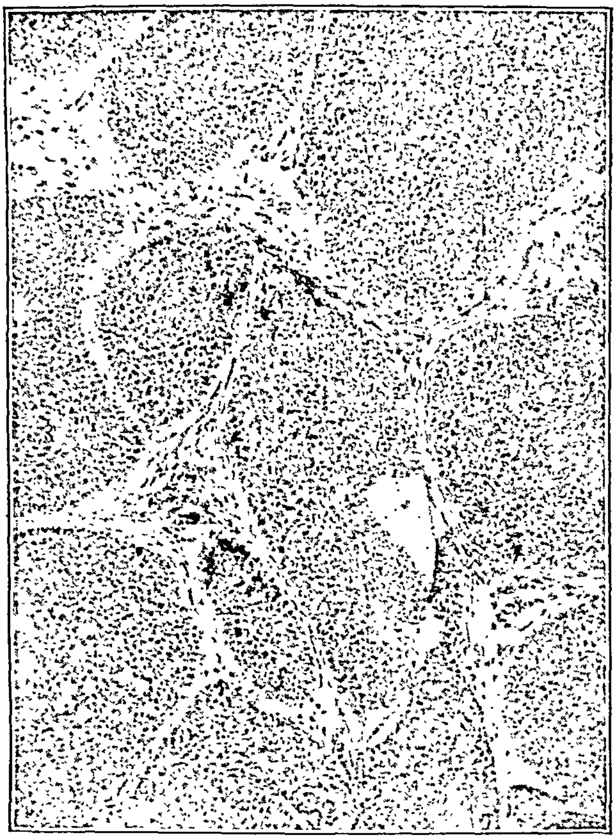


Fig. 4.—Low power magnification, slightly reduced. Note the rounded masses of epithelial cells separated by bands of hyalinized connective tissue.

Mrs. J. R., a white woman aged 47, was first seen in the outpatient dermatologic department of Hamot Hospital on Feb. 15, 1946. Her general health was good. She stated that following an injury to her scalp which occurred in early life she noticed "some small lumps" on her scalp. These continued to grow in size and number. Examination revealed a growth covering the entire scalp and extending down over the eyes and ears (fig. 3). The lesions were pinkish and bluish and varied from the size of a pea to that of a small orange. The largest lesion hung down over the right eye and interfered with the vision. The lesions were lobulated and pedunculated. Hair was present in moderate amount.

The gross appearance was that of a scalp covered with grapes and small tomatoes (fig. 1). Some of the lesions were firm and some were rubbery in consistency. There were also various sizes of solitary nodules on the face, neck, chest, abdomen and upper part of the back. There was a small group of closely set lesions on the lower portion of the back (fig. 2).

An unbearably foul odor due to a purulent secretion between the tumors emanated from the scalp. It was almost impossible to be near the patient.

She stated that her father and a sister, both of whom are deceased, had had similar but much less extensive, lesions of the scalp. A niece, the daughter of the sister mentioned, is similarly afflicted.

On Feb. 22, 1946 the patient was admitted to Hamot Hospital. Through the use of penicillin compresses (1 to 500) and penicillin by injection, the infection cleared up and the foul odor subsided somewhat. On March 13, 1946 two lesions were removed surgically by Dr. J. W. Switzer. One of these was the largest, which hung down over the right eye. During its removal, there was difficulty in controlling the bleeding. The other lesion which was removed had been located on the left side of the chest and was about the size of a walnut. Biopsies were performed by Dr. E. L. Armstrong.

It was suggested to the patient that mass removal of the tumor as performed by Gabarro[6] on his patient be permitted, but the patient's husband refused. It is of interest that she took great pride in her unusual appearance and enjoyed being the center of attraction when presented before various clinics.

She was discharged from the hospital on March 29, 1946.

BIOPSY

The biopsy report was as follows: The sections showed that the specimens were composed of varying sized rounded masses of epithelium derived from the basal layer. These epithelial masses were separated by bands of hyalinized connective tissue. The bands were varied in width. The cells were more or less uniform in size and were small, with deep-staining rounded nuclei. Mitotic figures could not be demonstrated in nuclei of basal cells (see figs. 4 and 5).

This description compares favorably with that given by McCarthy in "Histopathology of Skin Diseases" (page 358).

SUMMARY

1. This case of cylindroma is believed to be the most extensive one reported in American medical literature. The case is typical, however, in that it occurred in a woman who gave a history of involvement of other members of the family.

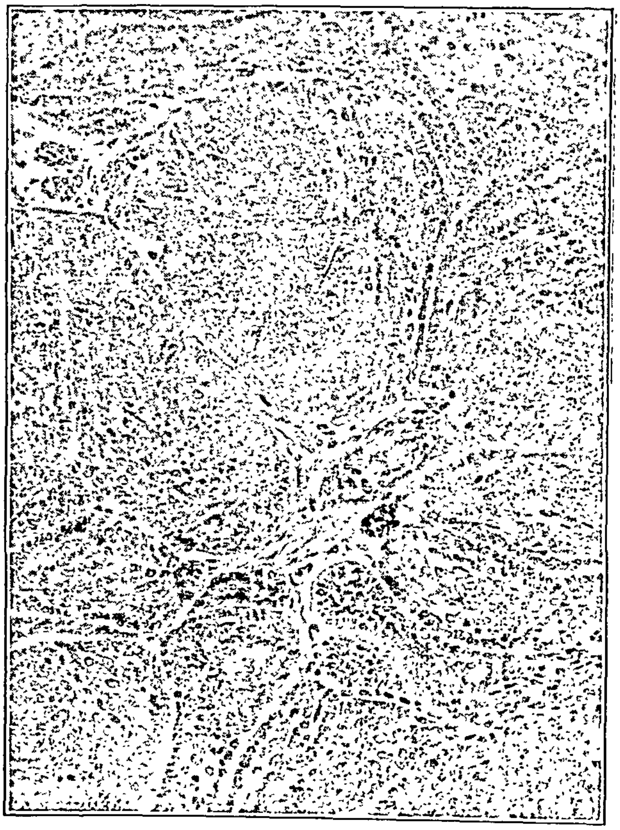


Fig. 5.—High power magnification, slightly reduced. Note the uniformity of size of the cells and the deep-staining rounded nuclei. Mitotic figures are absent.

2. Surgical intervention, except for the removal of a large mass which interfered with vision of the right eye and a small lesion from the left side of the chest for biopsy, was refused.

134 West Ninth Street.

Special Article

OBSERVATIONS AT THE 1946 DOCTORS' ART SHOW

ROSE LAUGHLIN
Evansville, Ind.

The American Physicians Art Association, now almost ten years young, held their annual art show at San Francisco July 1 to 5, 1946. The city fathers made the beautiful War Memorial Civic Opera House available for the purpose. The entire mezzanine floor was used, so that over 5,000 square feet of hanging surface was available. This was a larger area than that of any previous exhibit.

On the first day, the front doors were kept locked until the official opening hour, noon. Yet for two hours before noon over 400 eager persons "beat the gun" by coming around to the back door, through the stage entrance. It was an impressive demonstration of art laughing at locksmiths.

The surgeons, gynecologists and obstetricians and the neurologists and psychiatrists of the American Medical Association held their scientific meetings on other floors of the Opera House while the art exhibit was taking place on the mezzanine.

An amusing incident occurred on the first day, before everybody attending the convention became oriented. A couple of young physicians still in army uniform walked up the stairs and spent half an hour in the art show before one of them suddenly remembered that he was due in room 302 where the N. P. (neurology and psychiatry) section was holding its scientific meeting. His companion seemed to enjoy his discomfiture. "Why Bill, you're in the N. P. right here. Look at these pictures. We try to get our patients to do occupational therapy like this, and here we are—you and I—not practicing what we preach."

He was expressing, in a breezy way, what hundreds of physicians have discovered and what was best expressed by that great scholar Sir William Osler when he said: "One cannot practice medicine alone, and practice it early and late, as so many of us have to do, and hope to escape the malign influences of a routine life. The incessant concentration of thought upon one subject, however interesting, tethers a man's mind in a narrow field. The physician needs a clear head and a kind heart; his work is arduous and complex, requiring the exercise of the very highest faculties of the mind, while constantly appealing to the emotions and finer feelings."

The proof of the doctor's need for art as a recreation, as a form of "work by the side of work," is to be found in the fact that over 300 of this year's art works were by physicians who had been "dabbling in art" less than three years; of these physicians 112 were at it less than one year!

The twenty-four judges were men and women on the firing line of the various art mediums who had been selected by Dr. Grace Morley, head of the San Francisco Museum of Art. They worked for hours, singly and in groups, returning several times when necessary, reviewing pieces under different lights, taking things down off the walls, putting some back, removing others, gathering them in small groups on the floor and arguing amongst themselves like lawyers over their respective merits.

The judges seemed to favor originality of conception more than execution. In some instances they were critical of the mixing of styles in one piece. They were more severe with the older (in experience) artists than with the newcomers.

General view of the 1946 exhibit of the American Physicians Art Association.

Average Size of the Hypophysial Fossa.—The hypophysial fossas of young adult soldier patients have been measured in order to establish a standard. The average size was found to be *anteroposterior 10.66 and depth 8.30 mm.* . . . By comparison the average measurement of the fossas of six pituitary adenomas was anteroposterior 23 and depth 17 mm.—Heublein, G. W.: Some Observations Concerning the Hypophysial Fossa, *Am. J. Roentgenol.* **56**:318 (Sept.) 1946.

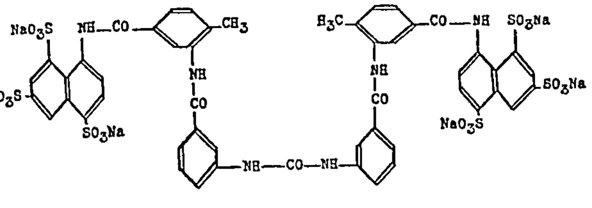
Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

NAPHURIDE SODIUM.—Suramin Sodium.—Hexasodium bis-(*m*-aminobenzoyl-*m*-amino-γ-methylbenzoyl-1-naphthylamino-4,6,8-trisulfonate) carbamide.—$C_{51}H_{34}O_{23}N_6S_6Na_6$.—M. W. 1429.18. The structural formula of naphuride sodium may be represented as follows:



Actions and Uses.—Naphuride sodium is a trypanosomicide which readily dissolves in sterile water; the solution is neutral in reaction, odorless and almost tasteless. Only freshly made solutions should be employed. It is slowly eliminated and remains active in the body for a considerable period, offering several months' protection against reinfection with the trypanosomes of both forms (Gambien and Rhodesian) of African sleeping sickness. It is claimed to produce excellent results in the first stage of trypanosomiasis and a favorable influence in the second stage of the disease. It is said to be of particular value in the prophylaxis of sleeping sickness. While the drug is relatively safe when properly used, it exerts an irritant action on the kidney; even after comparatively small doses there is frequent occurrence of albumin and sometimes hyaline and granular casts and red blood cells in the urine. However, albuminuria generally disappears spontaneously in about six weeks. The drug should be used only with great caution in patients with renal insufficiency and albuminuria, since severe nephritis, amblyopia, amaurosis and anuria have been noted. In larger doses naphuride sodium may have a hemolytic action. Occasionally dermatitis, chill, fever, headache, nausea and pruritus may be noticed, and more rarely conjunctivitis, stomatitis, cutaneous hemorrhages, globinuria and agranulocytosis. Since the compound is slowly eliminated and has a cumulative action, side effects may appear after cessation of treatment. The drug should not be continued in patients who show intolerance to initial doses. During treatment daily urinalysis and determination of blood pressure has been suggested, as have frequent complete blood counts, determination of nonprotein nitrogen content of the blood, and determination of the potassium, sodium and chloride content of the blood, so that degeneration of the adrenal cortex, if it occurs, may be detected early.

Dosage.—Naphuride sodium is usually administered intravenously in a freshly prepared 10 per cent solution. If a venipuncture is impossible, the solution may be injected intramuscularly. During the preparation of a solution, the powder is sprinkled to avoid formation of clumps on the surface of sterile distilled water. In the treatment of African sleeping sickness, the average single dose for adults is claimed to be 1 Gm. and the total dose from 5 to 10 Gm., 1 Gm. being given at weekly intervals. Some administer 1 Gm. on consecutive or on alternate days for three doses, followed by 1 Gm. weekly for from two to seven additional doses, so that the total dose is from 5 to 10 Gm. Combined treatment with naphuride sodium and tryparsamide has also been recommended, since cases with invasion of the central nervous system, as may occur early in the disease, are favorably influenced by the arsenical.

For the prophylaxis of African sleeping sickness the dose for adults is 1 Gm., for children from 0.3 to 0.75 Gm. and for infants from 0.15 to 0.2 Gm. The same dose is repeated in a week. At the expiration of three months, but not before, a similar prophylactic procedure may be followed.

Tests and Standards.—

Naphuride sodium occurs as a white to slightly pinkish, odorless, almost tasteless powder, which darkens on exposure to light. It is readily soluble in water; insoluble in acetone, benzene and ether. It is incompatible with strong acids or alkalis. The powder does not exhibit an exact melting point. An aqueous solution of naphuride sodium is slightly colored and is neutral to litmus (*p*H of a 10 per cent solution is about 6.0).

Place 1 cc. of 1 per cent solution of naphuride sodium in a test tube and add 2.5 cc. of *o*-phenanthroline ferrous complex solution (U. S. P. XII, p. 739): a red precipitate forms.

Naphuride sodium responds to tests for the presence of carbon, hydrogen, nitrogen, sulfur and sodium.

Dissolve about 0.5 Gm. of naphuride sodium in 20 cc. of water, add 5 cc. of hydrochloric acid; cool and then add 1 drop of tenth-normal sodium nitrite solution. Place a drop of the mixture on starch-iodide paper: a blue-black spot is produced *(absence of free amino groups).*

Fuse 1 Gm. of naphuride sodium with sodium hydroxide and add small portions of potassium nitrate until the melt is completely oxidized. After cooling, dissolve the residue in water, acidify with nitric acid and add 15 cc. of tenth-normal silver nitrate. Boil the mixture to expel the nitrite present, cool, filter to remove the silver chloride formed and titrate the excess of silver nitrate with tenth-normal ammonium thiocyanate solution, using ferric ammonium sulfate as the indicator: the amount of chloride found should not be more than 1 per cent.

Dry about 1 Gm. of naphuride sodium accurately weighed to constant weight at 150 C.: the loss in weight should not exceed 15.0 per cent.

Ash about 0.4 Gm. of naphuride sodium in the presence of sulfuric acid: the sulfated ash is not more than 30 per cent calculated to the dry substance.

Dissolve about 0.5 Gm. of naphuride sodium, accurately weighed, in 20 cc. of 10 per cent sodium hydroxide solution contained in a flask and heat under reflux for five hours. Cool, transfer the contents of the flask to a beaker and dilute to about 100 cc. Acidify the solution with 15 cc. of hydrochloride acid, cool to 0-10 C., add a few crystals of potassium bromide and titrate with tenth-normal sodium nitrite solution, using starch-iodide paste as the outside indicator. Each cubic centimeter of tenth-normal sodium nitrite is equivalent to 0.0238 Gm. of anhydrous naphuride: the amount of naphuride sodium found is not less than 97 per cent calculated to the dry basis.

Winthrop Chemical Co., Inc., New York
Naphuride Sodium: 1 Gm. ampuls.

Council on Foods and Nutrition

ACCEPTED FOODS

The following food products have been accepted as conforming to the Rules of the Council on Foods and Nutrition of the American Medical Association for admission to Accepted Foods.

James R. Wilson, M.D., *Secretary.*

PREPARATIONS USED IN THE FEEDING OF INFANTS (*See* Accepted Foods, 1939, p. 156).

Gerber Products Company, Fremont, Mich.

Gerber's Strained Oatmeal consists of finely ground oat flour, nondiastatic malt, dried primary grown brewers' type yeast, dicalcium phosphate, salt and sodium iron pyrophosphate.

Analysis (submitted by manufacturer).—Moisture 6.8%, protein (N × 6.25) 14.7%, fat (acid hydrolysis) 7.3%, carbohydrate (other than crude fiber) 65.6%, crude fiber 1.2%, total ash 4.4%.

Calories.—110 per ounce; 3.9 per gram.

Vitamins and Minerals.—	Per Hundred Grams
Thiamine	2.0 mg.
Riboflavin	0.3 mg.
Calcium	516.0 mg.
Phosphorus	645.0 mg.
Iron	46.0 mg.
Copper	1.0 mg.

Libby, McNeill and Libby, Chicago.

Libby's Strained and Homogenized Vegetables with Beef and Barley consists of carrots, beef, tomato juice, potatoes, barley, celery, salt and onions.

Analysis (submitted by manufacturer).—Total solids 12.21%, total moisture 87.79%, total ash 1.20%, fat (ether extract) 0.06%, crude fiber 0.75%, protein 4.09%, carbohydrates (by difference) 6.11%, salt 1.00%, calcium 22.1 mg. per hundred grams, phosphorus 65.0 mg. per hundred grams, iron 2.1 mg. per hundred grams.

Calories.—41 per hundred grams.

Vitamins.—	Per Hundred Grams
Thiamine	0.077 mg.
Riboflavin	0.043 mg.
Niacin	1.33 mg.

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SATURDAY, NOVEMBER 9, 1946

THE Rh FACTOR: A CRITICAL APPRAISAL

The rapid application of the discovery of the Rh factor to the clinical problems of explanation and prevention of hemolytic intragroup transfusion reactions, as well as diagnosis and treatment of fetal erythroblastosis, has brought an avalanche of publications. Some of the conclusions seem to have been drawn hastily from limited observations. A large number of articles in magazines and in the daily press have been factually erroneous. The prevailing confusion is fraught with possible serious consequences. Some young couples have been advised not to have children for no other reason except that the husband was Rh positive and the wife Rh negative. In several instances the death of the first child of such couples was attributed to fetal erythroblastosis on the basis of the Rh factor determinations in the parents, while the necropsy revealed other causes of death. Cesarean sections have been advocated by some as a means of saving babies with erythroblastosis by eliminating the damage of the last few weeks of intrauterine life.

Much remains to be learned regarding the Rh factor, but the verified information thus far accumulated justifies certain conclusions with the reservation that they may have to be revised as our knowledge increases.

The evidence indicates that an Rh-negative wife of an Rh-positive man is almost certain to have at least one normal child unless she has received blood transfusions in the past. *Transfusions of Rh-positive blood* have been found in the history of an impressively large number of women whose first children had erythroblastosis. Only one in from twenty-five to fifty Rh-negative wives of Rh-positive husbands becomes sensitized to the Rh factor and gives birth to babies with erythroblastosis. The treatment of erythroblastosis with judiciously administered transfusions, preferably of Rh-negative blood, is saving a large proportion of infants who would have otherwise succumbed to the disease. One can nowadays be prepared for the approaching trouble by testing women for Rh antibodies during pregnancy. New types of antibodies have been discovered. To the previously known Rh agglutinins Race[1] and Wiener[2] have added an antibody which combines with the red cells without clumping them but which prevents the clumping of the red cells by a subsequently added agglutinating serum. Race calls it "incomplete" antibody, and Wiener named it "blocking antibody or blocker." Diamond[3] showed that agglutination by the serum of an Rh-negative person sensitized by Rh-positive blood may become manifest if a 50 per cent suspension of cells or preferably whole citrated blood is used when the usual technic employing a 2 per cent cell suspension has failed. Wiener[4] and Diamond[5] have shown that agglutination of Rh-positive red cells may be demonstrated in serum which fails to agglutinate in the usual test if serum or plasma or human or bovine albumin is used as a menstruum in place of isotonic solution of sodium chloride. Wiener uses the term "conglutinin" or "glutinin" for the substance responsible for the phenomenon. Coombs[6] suggested still another technic. He uses an antihuman globin serum produced in rabbits. A drop of it added to Rh-positive red cells clumps them though they failed to be agglutinated by the serum of a sensitized Rh-negative person. The *antiglobulin* serum produced in the rabbit reacts with the globulin of the Rh antibody, which covers the red cells with a fine film.

Probably these newly observed antibodies (incomplete, blockers and conglutinins) are all one and the same antibody to be distinguished from the regular agglutinins. The practical result thus far has been the possibility to detect Rh sensitization in almost 100 per cent of mothers of babies with erythroblastosis. Detection of sensitization during pregnancy means, as a rule, erythroblastosis in one of its forms in the infant except in cases in which antibodies have been left behind from a previous pregnancy. Therefore early testing and periodic follow-up during pregnancy are recommended. A sharp rise points to the presence of an Rh-positive fetus with likelihood of erythroblastosis, though cases have been reported of antibodies demonstrated during pregnancy followed by subsequent birth of healthy Rh-positive infants. This, however, is likely to be a rare exception.

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1. Race, R. R.: An "Incomplete" Antibody in Human Serum, Nature **153:** 771 (June 24) 1944.
2. Wiener, A. S.: A New Test (Blocking Test) for Rh Sensitization, Proc. Soc. Exper. Biol. & Med. **56:** 173 (June) 1944.
3. Diamond, L. K., and Abelson, Neva M.: The Demonstration of Anti-Rh Agglutinins: An Accurate and Rapid Slide Test, J. Lab. & Clin. Med. **30:** 204 (March) 1945.
4. Wiener, A. S.: Conglutination Test for Rh Sensitization, J. Lab. & Clin. Med. **30:** 662 (Aug.) 1945.
5. Diamond, Louis K., and Abelson, Neva M.: The Detection of Rh Sensitization: Evaluation of Tests for Rh Antibodies, J. Lab. & Clin. Med. **30:** 668 (Aug.) 1945.
6. Coombs, R. R. A.; Mourant, A. E., and Race, R. R.: A New Test for the Detection of Weak and Incomplete Rh Agglutinins, Brit. J. Exper. Path. **26:** 255 (Aug.) 1945.

It has been suggested that agglutinins in the serum of a pregnant woman have a different prognostic significance than the so-called blocking antibodies[7] in the sense that the former are more frequently followed by severe icterus and the latter by hydrops or severe anemia. The evidence indicates that while this may be true in a series of cases treated statistically there are too many exceptions to permit practical application to individual cases.

There is little to recommend cesarean section as a means of saving babies with erythroblastosis. Too many disappointments have been experienced. The handicap of prematurity is rarely outweighed by the alleged shortening of exposure to the damaging action of maternal Rh antibodies. The crux seems to be our inability thus far to recognize with certainty the severity of the disease in the baby by the examination of the mother's blood. Possibly further study and especially critical correlation of quantitative and qualitative antibody values with the condition of the infants at birth will teach us to formulate more reliable indications for early termination of pregnancy.

BCG IMMUNIZATION

The results of the use of the BCG vaccine in man are influenced by so many factors that accurate evaluation is still difficult. All reports agree that the vaccine properly prepared and used is harmless, as cases of tuberculosis caused by BCG vaccine have not been reported thus far. In some cases in which vaccinated children developed and died of tuberculosis, the bacilli from the pleural exudate, cerebrospinal fluid and lungs were of the human and not the bovine type. Holm[1] of Denmark states that since 1940 vaccination with the bacillus of Calmette-Guérin has been adopted in that country as an essential weapon in the fight against tuberculosis. A large part of the young people of Denmark are tuberculin negative. Since it is known that tuberculin negative persons acquire tuberculosis much more readily when exposed, BCG vaccination is believed to be a valuable adjunct in the control of tuberculosis. Extensive examinations for tuberculosis carried out in recent years utilizing identical technic (the Mantoux test), the same tuberculin dosage and even the same tuberculin dilutions have furnished a large amount of data on the extent of tuberculous infection in the Danish population. About two thirds of the population in Denmark at the age of 14 years gives a negative tuberculin reaction, and at the ages between 20 to 23 years one third of the population still gives a negative reaction. The vaccination renders by far the greater majority of vaccinated persons tuberculin positive. The duration of the reactivity is at least four years after the vaccination for the majority of the vaccinated persons. In Denmark BCG vaccination has been employed chiefly in tuberculous environments. All children with a negative reaction in a tuberculous environment have been vaccinated, also the newborn, and on development of a positive reaction they have been permitted to remain in their environment. This appears to be a severe test for the vaccination. However, the Tuberculosis Dispensary of Copenhagen reports that morbidity and mortality from tuberculosis among the children in a tuberculous environment have been reduced following vaccination to almost zero. Previously mortality among children exposed to tuberculosis in their homes was high, but in recent years children thus exposed have not died of tuberculosis, and children who become ill have a much milder form of tuberculosis than previously observed. Holm concludes that BCG vaccination gives considerable, although not absolute, protection. It protects almost completely against the morbid phenomena of the tuberculous primary infection, and it also affords considerable protection against genuine tuberculosis of the various organs, in particular against pulmonary tuberculosis.

Hertzberg[2] states that in Norway all children born in a tuberculous environment are vaccinated with BCG vaccine and an attempt is made to keep them isolated from the tuberculous members of the family until they become tuberculin positive. The allergy produced by the vaccination lasts more than three or four years. In the health department of Bergen, among 4,400 persons vaccinated who were observed up to three years only 1 developed ulcerative pulmonary tuberculosis and 11 developed tuberculosis of the hilar lymph nodes. The National Society Against Tuberculosis in Norway favored mass vaccination in 1945. Vaccination of persons living in a tuberculous environment, student nurses and others working in tuberculosis institutions, students in the graduating classes of the common schools, students and recruits seemed particularly desired.

Levine and Sackett,[3] reporting the results of BCG immunization in New York City, assume a more conservative attitude. Although most reports have been optimistic, they feel that the vast majority of these studies have been inadequately controlled. The Bureau of Laboratories of the New York City Department of Health undertook in 1926 a study of the efficacy of the BCG vaccine. The children vaccinated were referred from tuberculosis clinics and hospitals in New York City. They were all from tuberculous families and, with rare exceptions, were placed under observation before they were 12 months of age, many of them during the first four weeks of life. Children were not accepted for study after 1 month of age unless tuberculin tests up to 1.0 mg., roentgenograms and physical examinations were negative. In the first two years of the study the vaccine was given orally during the first ten days of life. By this method approximately 50 per cent developed positive tuberculin reactions. Thereafter the parenteral method of vaccination was used; it resulted in approximately 85 per cent of positive reactors. Up to Jan. 1, 1944, 2,084 children from tuberculous homes in New York City have been followed, of whom 1,011 were vaccinated and 1,073 held as controls. Up to 1933, 990 children were studied, 445 of whom were vaccinated. In this series the children were divided into two equal groups, those to be vaccinated and those serving as controls. A physician was assigned to a number of cases and was told to vaccinate half of the group. Subsequent experience has shown that by this method of selection the tendency was to inoculate the children of the more intelligent and cooperative parents and to keep the children of the noncooperative parents as controls. This was probably the source of considerable error, as the cooperative parents not only will take more careful precautions but will bring the child more regularly to the clinic for child care and feeding. In this series the tuberculosis mortality of the controls was over four times that of the vaccinated groups (3.38 per cent as against 0.68 per cent). In a second series the procedure of selection was changed in 1933 so that alternate children were routinely vaccinated, the remainder serving as controls. Mortality figures for the two groups in this series were essentially similar, the tuberculosis mortality of the vaccinated cases being 1.41 per cent as against 1.51 per cent for the controls. The authors point to a number of factors which could affect the comparative results, such as parental cooperation, economic conditions, racial distribution, exposure, lost cases and percentage of necropsies. Routine separation of children for three months before and three months after BCG vaccination to eliminate the hazard of continuous contamination with human bacilli was not found to be a feasible or safe procedure, although a small group where such separation was possible (91 vaccinated and 96 control cases) indicated that the BCG inoculation might be of protective value were such separation practical.

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[7] Wiener, A. S., and Brody, M.: Pathogenesis of Kernicterus, Science **103:** 570 (May 3) 1946.

[1] Holm, J.: BCG Vaccination in Denmark, Pub. Health Rep. **61:** 1298 (Sept. 6) 1946.

[2] Hertzberg, G.: BCG-situasjonen i Norge, Nord. med. **30:** 1237 (June 7) 1946.

[3] Levine, M. I., and Sackett, Margaret F.: Results of BCG Immunization in New York City, Am. Rev. Tuberc. **53:** 517 (June) 1946.

The efficacy of BCG vaccination must be judged by its ability to reduce the tuberculosis mortality of children vaccinated in their homes in the midst of a tuberculous environment. The authors conclude that as a public health measure the routine vaccination with BCG of children from tuberculous homes is less advantageous than removal of the tuberculous subject from the home.

THIAMINE UTILIZATION AND LIVE YEAST

Yeast has been regarded for many years as a substance supplying numerous valuable nutrients to the living organism. Modern studies by nutritionists have confirmed this general thesis but have shown that there is at least one exception, namely thiamine utilization when live bakers' yeast is included in the human dietary. Experimental studies have indicated[1] that thiamine utilization is poor when live bakers' yeast is included in the diet. This seeming paradox was first convincingly demonstrated in human subjects last year by a group of investigators at the University of Wisconsin.[2] These workers found, contrary to what might have been expected, that the incorporation of either of two types of live bakers' yeast (8 to 50 Gm., or approximately one to four cakes daily) in a normal human dietary resulted in an increased excretion of thiamine in the feces and a decrease in the urinary thiamine to subnormal levels. The use of a "high vitamin" type of bakers' yeast resulted in an even greater fecal loss of thiamine. Boiling the yeast preparation lessened the fecal loss, thus indicating that the impairment of thiamine absorption was due to the use of live yeast cells.

The observations mentioned were soon confirmed by studies on rats[3] in which the growth response was used as an index to thiamine utilization from live yeast and by other studies on normal human subjects.[4] The latter experiments indicated that only 17 per cent of the total thiamine present in the live yeast is available. The decreased absorption of thiamine from the gastrointestinal tract was attributed to thiamine removal and phosphorylation by the live yeast cell for its own metabolic purposes. Laxation is apparently not a decisive factor.[2] Current studies by the Wisconsin group[5] have further confirmed and extended the problem. Five young college women were fed a diet rich in thiamine to which for certain experimental periods live bakers' yeast (15 to 150 Gm. daily) was added. As before, the fecal loss of thiamine was definitely increased while the urinary thiamine level decreased to values "within the range accepted as denoting considerable to severe deficiency."

The practical implications of these scientific studies is obvious. Live bakers' yeast cannot longer be regarded as a satisfactory source of thiamine for human subjects; in fact the reverse is the case. Perhaps the comment should be added, however, that bakers' yeast cells killed

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[1] Walker, R., and Nelson, E. M.: Am. J. Physiol. **103**: 25 (Jan.) 1933.

[2] Parsons, Helen T.; Williamson, Anne, and Johnson, Mary L.: J. Nutrition **29**: 373 (June) 1945.

[3] Parsons, Helen T.; Foeste, Audrey, and Gilberg, Helen: J. Nutrition **29**: 383 (June) 1945.

[4] Hochberg, Melvin; Melnick, Daniel, and Oser, Bernard L.: J. Nutrition **30**: 201 (Sept.) 1945.

[5] Ness, Helen T.; Price, Echo L., and Parsons, Helen T.: Science **103**: 198 (Feb.) 1946.

(by heat) appear to be a good source of thiamine and, of course, that dried brewers' yeast, which has been used with success therapeutically for a number of years, is an excellent source of thiamine as well as other B vitamins.

Current Comment

WINSTON-SALEM EMPLOYS TRANSCRIPTIONS EFFECTIVELY

An example shows how electrically transcribed programs such as those furnished by the American Medical Association can be promoted with great effectiveness by ingenious local cooperation. At Winston-Salem, N. C., the transcribed series "Before the Doctor Comes" was used with the cooperation of the city health department, the Forsyth Medical Society, the Bowman Gray School of Medicine and the Forsyth Health Committee with the Community Radio Council and Station WSJS. After the broadcasts had been planned, announcements were sent throughout the community on mimeographed dodgers, and publicity was arranged through local newspapers, daily and weekly, and other publications reaching various groups of people. The transcribed programs played ten minutes, leaving approximately three minutes for local participation. This was supplied by "live" broadcasts made by physicians and other community leaders, including the health officer and the health educator. Thus a fully rounded fifteen minute program was produced, and the local interest and usefulness of the transcriptions were enhanced by the supplementary material provided, which had a distinctly local flavor. Also it was possible to offer booklets and other material pertinent to the topic and thus encourage listeners to write in. The success of this program called forth a letter from the radio station expressing satisfaction with the results of the broadcasts and offering its full cooperation for future projects.

SKIN DISEASES AND VITAMIN A

Much effort has been devoted recently to studying the possible connection between certain skin diseases and the levels of vitamin A in the blood plasma. Two British investigators[1] determined the plasma vitamin A levels in 116 dermatologic patients and compared them with 116 control patients. A mean value of 116 international units of plasma was found in patients with skin disease, and this was virtually identical with the mean value of 113 international units found in the controls. Some support was found for the theory that secondary deficiency of vitamin A might be of some significance in a few rare skin diseases. In 6 cases of Darier's disease, 2 of pityriasis rubra pilaris and 3 of ichthyosis the mean level of vitamin A in the plasma was 77 international units. In patients with Darier's disease and pityriasis rubra pilaris the administration of large doses of vitamin A concentrate resulted in an eventual plasma vitamin A level considerably above normal values. In 2 of the patients with Darier's disease the skin became normal or nearly so after treatment with vitamin A and grenz rays. The other patients with Darier's disease showed less improvement, and in 1 the lesions remained unchanged even when the vitamin A levels in the plasma reached high levels. Two of the patients with pityriasis rubra pilaris showed some, but incomplete, improvement of the skin when the plasma vitamin A levels reached normal or higher than normal levels. It would seem from these and other studies that the relation between the amounts of vitamin A in the blood plasma and the appearance of the skin lesions in several rare dermatologic conditions might be of significance, though in the vast majority of skin diseases there is little or no direct relationship.

PROLONGED EXPOSURE TO SIMULATED HIGH ALTITUDES

Recently D'Angelo[1] reported studies on the respiratory metabolism of 6 healthy men subjected to prolonged exposure at simulated altitudes of 8,000 to 10,000 feet. The men were kept in the low pressure chamber for ten hours without supplementary oxygen and under standardized conditions and restricted food intake. The respiration was increased under the conditions of the study. This involved an increase in depth rather than in rate of breathing and was believed to indicate a respiratory alkalosis. The physiologic effects included an increase in the minute volume and carbon dioxide elimination, elevation of the respiratory quotient and a shifting of the urinary p_H toward alkalinity in all those who displayed appreciable hyperventilation. Furthermore, various behavior changes, notably somnolence, irritability, inattention, lack of volition and fatigue, were observed. D'Angelo suggests that serious consideration ought to be given toward putting a high altitude limit on prolonged flights without supplementary oxygen. He also suggests that the use of extra oxygen at altitudes as low as 8,000 feet may be advisable. The curious feature of this study is the comparatively low altitude at which supplementary oxygen would seem to be indicated. Many people live permanently at altitudes of close to 8,000 feet (and even above) without apparent harmful mental or physiologic effects. Consequently a number of pertinent questions arise. Are permanent residents of high altitude areas affected more than has so far been realized? Does the speed of rise to 8,000 or 10,000 feet as employed in D'Angelo's studies influence the effects of the high altitude more than would a more gradual rise and lengthy acclimatization? Although remaining at 8,000 to 10,000 feet for ten hours is called "prolonged" by D'Angelo, is it likely that the exposure is too short in which to bring about the physiologic adjustments which can be obtained by longer exposures? These and other readily propounded questions serve to illustrate the deficiencies still remaining concerning knowledge of the effects of altitude on the human body.

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[1] Leitner, Z. A., and Moore, T.: Vitamin A and Skin Diseases, Lancet **2**: 262 (Aug. 24) 1946.

[1] D'Angelo, Savino A.: The Respiratory Metabolism of Human Subjects During Prolonged Exposure to Simulated Altitudes of 8,000 and 10,000 Feet, Am. J. Physiol. **146**: 170 (Aug.) 1946.

ORGANIZATION SECTION

Official Notes

RESOLUTIONS TO BE PRESENTED TO HOUSE OF DELEGATES

NOTE.—These resolutions are published in accordance with a request of the House of Delegates to the effect that resolutions to be presented before the House of Delegates be published thirty days before the House of Delegates is to convene in session

The following resolutions will be submitted by the delegates of the Colorado State Medical Society:

Resolution on Prohibition of Political Activity on Part of the United States Public Health Service

WHEREAS, The United States Public Health Service was created, organized and is amply financed for certain specific purposes, namely the promotion of the public health, the prevention of disease, the control of epidemics and the extension of help and advice to state and local communities in these and similar problems of disease prevention, and

WHEREAS, The United States Public Health Service in wartime has certain additional duties and functions related to the armed forces in assisting them in protection of the nation and its citizens, and

WHEREAS, Existing federal laws contemplate that regular officers of the United States Public Health Service shall devote their full time to the aforementioned duties, and

WHEREAS, Certain officers and members of the United States Public Health Service, including its Surgeon General, have within the last year so put aside consideration of the functions and duties for which they were appointed and commissioned as to devote much of their time and energy to political activities, even to the extent that the Surgeon General of that service has issued written orders to his staff and his officers directing their utterances and thinking on highly controversial questions of medical legislation wholly unrelated to the proper functions of the United States Public Health Service and in opposition to American democratic processes, now therefore be it

Resolved, That the House of Delegates of the American Medical Association condemns without qualification, as a perversion of function and dereliction of duty, political and partisan activities on the part of officers of the United States Public Health Service, including its Surgeon General, and recommends that steps be taken to prohibit political activity on the part of the United States Public Health Service, and that further steps be taken to restore the prestige of this important department of our government in the scientific field for which it was created, organized and financed

Resolution on Change of Policy of American Specialty Boards

WHEREAS, Certain of the American specialty boards have recently announced discontinuance of their former practice of according credit for preceptorships with a certified diplomate and have ruled instead that every applicant for certification must serve a lengthy residency following his internship; and

WHEREAS, This recent change in policy constitutes an unfair imposition on many returned medical veterans and other young physicians who find it impossible to obtain such residencies, and

WHEREAS, It is the opinion of the American Medical Association that the preceptorship is one of the best methods of teaching the art of medicine, and

WHEREAS, Qualified and experienced preceptors already certified by these boards are available in all parts of the United States, and

WHEREAS, The art of medicine is frequently neglected in hospital residencies owing to overemphasis on the science of medicine, now therefore be it

Resolved, That the House of Delegates of the American Medical Association requests the Advisory Board for Medical Specialties and the several American specialty boards to review and reconsider their policies in relation to residencies and preceptorships in accordance with the foregoing statements

Resolution on Appointment of Reference Committees

WHEREAS, The By Laws of the American Medical Association contemplate the appointment of House of Delegates' reference committees from the membership of the House of Delegates; and

WHEREAS, The duty of reference committees to pass judgment on the activities of elected and appointed officers makes it obviously improper for these committees to be composed of the persons whose actions they are expected to judge, and

WHEREAS, In recent years the Board of Trustees of the American Medical Association has acted as a reference committee of the American Medical Association House of Delegates to pass judgment for the House of Delegates on actions previously taken by the Board of Trustees; and

WHEREAS, Official protest of this action has been received from the Colorado State Medical Society, now therefore be it

Resolved, That the House of Delegates of the American Medical Association instruct its speaker to utilize as reference committees of this House of Delegates only committees composed exclusively of elected Delegates.

THE ATLANTIC CITY SESSION

Representatives of Various Sections to the Scientific Exhibit

Representatives to the Scientific Exhibit have been appointed by each section of the Scientific Assembly to assist and advise in securing exhibits for the Atlantic City session, June 9-13, 1947. Their names and addresses follow:

Internal Medicine—Dr Thomas C. Garrett, 3803 Oak Road, Germantown, Philadelphia

Surgery, General and Abdominal—Dr Warren H. Cole, University of Illinois College of Medicine, 1853 West Polk Street, Chicago 12.

Obstetrics and Gynecology—Dr. Frederick H. Falls, University of Illinois College of Medicine, 1853 West Polk Street, Chicago 12.

Ophthalmology—Committee on Scientific Exhibit, Dr. Georgiana D. Theobald, 120 Medical Arts Building, Oak Park, Ill, chairman; Dr. Derrick Vail, 55 East Washington Street, Chicago 2, and Dr. A. B. Reese, 73 East Seventy-First Street, New York 21.

Laryngology, Otology and Rhinology—Dr. Paul H. Holinger, 700 North Michigan Avenue, Chicago 11.

Pediatrics—Dr Albert V. Stoesser, 412 Delaware Street S E., Minneapolis

Experimental Medicine and Therapeutics—Dr. Robert W. Wilkins, Evans Memorial Hospital, 65 East Newton Street, Boston.

Pathology and Physiology—Dr. F. W. Konzelmann, Atlantic City Hospital, Atlantic City, N. J

Nervous and Mental Diseases—Dr. A. B. Baker, University of Minnesota Medical School, Minneapolis

Dermatology and Syphilology—Dr. Francis W. Lynch, 350 St. Peter Street, St Paul.

Preventive and Industrial Medicine and Public Health—Dr. Paul A. Davis, 1436 Delia Avenue, Akron 2, Ohio

Urology—R. John H. Morrissey, 40 East Sixty First Street, New York.

Orthopedic Surgery—Dr. David M. Bosworth, 742 Park Avenue, New York 21.

Gastro Enterology and Proctology—Dr. Donovan C. Browne, 1534 Aline Street, New Orleans

Radiology—Dr. S. W. Donaldson, 326 North Ingalls Street, Ann Arbor, Mich

Anesthesiology—Dr. Urban H. Eversole, 605 Commonwealth Avenue, Boston

General Practice of Medicine—Dr. J. Craig Bowman, 208 South Sandusky Avenue, Upper Sandusky, Ohio

Application blanks for space may be obtained from any of the section representatives or from the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago 10

Council on Medical Service

PREPAYMENT MEDICAL CARE PLANS

The Hospitalization and Health Center Program

The medical profession together with hospital and farm organizations worked for the enactment of this legislation. Announcement was made in THE JOURNAL, September 21, page 155, in regard to the formation of the Federal Hospital Council and the Advisory Committee "to assist Surgeon General Thomas Parran of the U S. Public Health Service in the administration of the hospital survey and construction act" It has been pointed out that the membership of the Federal Hospital Council, composed of eight persons, does not include a farm representative or an official representative from the American Medical Association or the American Hospital Association. One physician, Dr. Robert C. Buerki, dean of the Graduate School of Medicine, University of Pennsylvania, is on the Council Of special interest to the medical profession is the fact that Michael Davis is a member of this council as a representative of "the consumers of medical service."

THE ADVISORY COMMITTEE

The American Medical Association is represented on the Advisory Committee by Dr. Franklin S. Crockett, chairman, Committee on Rural Medical Service of the American Medical Association, of Lafayette, Ind, and Dr. Victor Johnson, secretary, Council on Medical Education and Hospitals, of the American Medical Association

The Advisory Committee composed of some twenty four men, should not be mere window dressing. From the reports of the first meetings of this group held September 17 and 18 in Washington it is evident that the committee will play an important part in any plans and program which are set up by the Surgeon General and the Federal Hospital Council.

RESPONSIBILITY OF THE AMERICAN MEDICAL ASSOCIATION

The American Medical Association through its Board of Trustees, the Councils on Medical Service and Medical Education and Hospitals and the Bureau of Legal Medicine and Legislation will keep in touch with developments that occur. Some work should be done promptly to set forth the conditions under which the medical profession may best cooperate in the implementation of the provisions of the Hill Burton bill. The Council on Medical Service and the Council on Medical Education and Hospitals have been asked by the Board of Trustees to draw up minimal standards for state societies to utilize in assisting in carrying out the provisions of the Hill Burton bill.

"Make no mistake the local people must watch every factor to see that those administering the program at the national state and local levels do not take control of the situation and thereby defeat the purpose of Congress and the Hill Burton legislation" says Ransom E Aldrich chairman American Medical Care Committee, Farm Bureau Federation Jackson Miss.

PREPAYMENT

The "Seal of Acceptance"—To date twenty-seven voluntary prepayment medical care plans have been awarded the Council's "Seal of Acceptance." They are

California Physicians' Service, San Francisco
Iowa Medical Service, Des Moines
Michigan Medical Service Detroit
Surgical Care, Inc, Kansas City, Mo
Nebraska Medical Service, Omaha
Medical Surgical Plan of New Jersey Newark
Ohio Medical Indemnity, Inc, Columbus
Medical Service Association of Pennsylvania *Harrisburg*
Oregon Physicians Service Salem
Physicians Association of Clackamas County Oregon City Ore
Hospital Service Corporation Birmingham Ala
Florida Medical Service Corporation Jacksonville Fla
North Idaho Medical Service Bureau, Lewiston Idaho
Genesee Valley Medical Care, Rochester, N Y
Hospital Saving Association of North Carolina, Chapel Hill
Oklahoma Physicians Service, Tulsa
Coos Bay Hospital Association Coos Bay Ore
Pacific Hospital Association, Eugene Ore
Klamath Medical Service Bureau, Klamath Falls Ore
Group Medical and Surgical Service Dallas Texas
The Dallas County Medical Plan, Dallas Texas
Surgical Care Inc, Roanoke, Va
Medical Surgical Service, Inc, Clarksburg W Va
Marion County Medical Service, Inc Fairmont W Va
Medical Surgical Care, Inc, Parkersburg W Va
West Virginia Medical Service Wheeling
Hospital Service of California Oakland

Other applications have been received and will be acted on at the next meeting of the Council.

Eighty-Four Plans—Up to the present time the Council has found eighty four voluntary prepayment medical care plans in operation. Each of these offers a free choice of physician and is sponsored by either the medical profession the Blue Cross or both. These plans are spread over thirty-two states the territory of Hawaii and Puerto Rico. In addition some thirteen states and the District of Columbia are in various stages of plan development. Only three states are without a plan or program.

Three and One-Half to Four Million—Enrolment reports from most plans show general and encouraging growth for the first six months of this year. The total enrolment as of June 30, with a half dozen plans yet to report their figures, was 3 435 885. Six plans showed an increase of over 100 per cent and sixteen an increase of over 50 per cent. Many plans reporting each month have shown a constant increase in enrolment since June 30.

District of Columbia—"Medical Service of the District of Columbia" has been completed to offer a prepayment plan in the Capital. Twenty incorporators have been selected. The plan will be a "service plan" for single persons earning $2,500 and for families with a $4,500 income per year. The scheduled monthly dues are 75 cents for the individual, $1 50 for a man and wife and $1 75 for a family.

Montana Physicians Service—One of the increasing number of new plans to commence operation has announced that enrolment started as of August 1. Over 70 per cent of the members of the Montana Medical Association are participating physicians. In the first two months over 5 000 subscribers have joined the plan. Congratulations Montana!

Illinois Prepayment Program—The Illinois State Medical Society has struggled hard and long to evolve a prepayment medical care plan. The house of delegates approved a plan several months ago but several amendments adopted at the last minute have held up progress. A recent communication from Dr Harold Camp, society secretary, indicates that the serious difficulties have been ironed out. A special meeting of the house of delegates has given the go ahead signal.

Maryland—A joint committee of the Chirurgical Faculty and Associated Hospital Service of Baltimore drafted a program in May. The program called for a separate corporation to be administered by Associated Hospital Service. No further developments have been reported to the Council.

Idaho—The North Idaho Medical Service Bureau of Lewiston Idaho has been formed to provide a prepayment program for the northern part of the state. As of June 30 the enrolment was 2 227. The State Committee on Prepaid Medical Care has recommended that a statewide plan be deferred for the present, awaiting the experience in northern Idaho.

South Carolina—South Carolina one of the few states without a prepayment plan may have something started next spring. Mr Meadors, director of public relations, suggested in the May issue of the *South Carolina Medical Association Journal* that enabling legislation be proposed at the January 1947 session of the South Carolina general assembly.

Maine—The house of delegates of the Maine Medical Association has authorized the Committee on Prepaid Medical Care Plans to take the necessary steps to secure an enabling act "which would empower the Maine Medical Association to adopt a representative insurance plan when such can be formulated."

Rural Enrolment—Surgical Care Inc, of Kansas City Mo, reports very encouraging activities in rural enrolment. The plan started a rural enrolment program in the late fall of 1945 and by August of this year had 3 500 subscribers in the service. Enrolment has proceeded through the Missouri Farm Federation and community groups.

Prepayment Plan Not Insurance—The California State Supreme Court has ruled that the state insurance commissioner has no jurisdiction over California Physicians' Service. This ruling ends some seven years of litigation and indicates that California Physicians' Service is not an insurance plan within the meaning of the California laws.

Tennessee—The prepayment committee in Tennessee has been requested by the house of delegates to proceed with drawing up a complete service plan outline including constitution, by-laws and proposed contracts. At the same time the committee is to study the facilities of private insurance carriers and their willingness to underwrite a plan.

Wyoming—An interesting article in the *Rocky Mountain Medical Journal* reveals that the Public Policy and Legislative Committee of the Wyoming State Medical Society has discussed plans for the inauguration of a Prepayment Medical Plan for Wyoming. Some desire has been expressed to determine the advisability of associating any developed plan with Wyoming Hospital Service and combining under one administrative agency both medical and hospital coverage. Also considered was the advisability of combining any resulting organization with Colorado Medical Service. No further developments have been reported.

Minnesota—The Minnesota subcommittee working on contracts and rates met October 6 in St Paul. Two types of contracts are being considered at this time. One contract will cover surgical and obstetric procedures, while the other will include surgical and obstetric procedure with certain medical benefits added. It is reported that 75 per cent of the recommended starting capital of $100,000 has already been obtained.

Arkansas.—The Prepayment Committee for the State of Arkansas has been discussing the best means of developing a prepayment plan. At the latest report a definite decision had not been reached as to whether to develop a service plan to be underwritten by the doctors or to have the plan handled through private insurance.

Connecticut.—The *Connecticut State Medical Journal* reported in June that negotiations with a private insurance company had been discarded in favor of a plan to be promoted and sold by the Blue Cross Hospital Plan. Recent reports, however, seem to indicate that this original decision may be altered in favor of a private insurance underwritten program.

Arizona.—The house of delegates of the Arizona State Medical Association approved a medical service plan for the people of the state of Arizona. The plan provides for surgical and obstetric care for group insured hospital patients. It also provides care for fractures both in and out of the hospital. The service covers the employee and his family and unmarried dependents under 19 years of age.

Ohio.—Ohio Medical Indemnity, which began operations in January of this year, reports that on August 1 its enrolment was 39,459.

Health Service Association, Detroit.—The organization of a new corporation, Health Service Association, has been granted a preliminary certificate by the Commissioner of Insurance for the State of Michigan, according to recent reports. It has been indicated that this action was necessitated as a result of disagreements with certain policies of Michigan Hospital Service. These policies have resulted in several hospitals operated by the Catholic Sisters of Mercy to withdraw from participation in Michigan's Blue Cross Plan. This withdrawal has left certain Michigan cities without any hospital participating with the statewide program.

The incorporators of the new association (actively identified with Michigan Medical Service, the statewide medical care plan sponsored by the state medical society) are reported to feel this action necessary to enable Michigan Medical Service to offer a more complete health protection service in areas not serviced by Blue Cross.

Four Plans Over 200,000.—The four leaders in number enrolled as of June 30 are Michigan Medical Service, 847,881; California Physicians' Service, over 337,000; Massachusetts Medical Service, 275,000, and United Medical Service, 274,861. The average increase in enrolment for plans in the 200,000 to 500,000 group was 55 per cent.

Eleven Plans Between 50,000 and 200,000.—There are eleven plans showing June 30 enrolment between 50,000 and 200,000. In order of size these are Hospital Saving Association of North Carolina; Colorado Medical Service; Surgical Care, Inc., Kansas City, Mo.; Hospital Service of California; Group Hospital Service of Delaware; Western New York Medical Plan, Inc.; Hospital Care Association, Inc., North Carolina; Medical-Surgical Plan of New Jersey; Medical-Surgical Care, New York; Oregon Physicians Service, and Medical Service Association, Inc., North Carolina.

Increase in Enrolment of 362 per Cent.—The largest percentage increase in enrolment for the first six months of this year was 362 per cent. This fine increase was experienced by Oklahoma Physicians Service of Tulsa.

Regional Meetings with Plan Executives.—Executives of the various plans were recently canvassed to secure their reaction to a series of regional meetings. In this way it was thought that the Council staff could become better acquainted with the plan managers and their problems. This would be accomplished with a minimum of inconvenience to the busy executives. As far as expediency will permit, such meetings will be coordinated with other scheduled meetings in given areas. To date the plan executives are overwhelmingly in favor of the idea, with only a few plans not yet expressing their opinions.

Associated Medical Care Plans.—The auditorium in the American Medical Association headquarters was lent to A. M. C. P. for its first annual meeting held in Chicago on October 4 and 5. Dr. L. Howard Schriver, Cincinnati, was elected as the new president, and the remaining officers were reelected. They are William Bowman, C.P.S., vice president; Dr. Norman Scott, Newark, N. D., treasurer, and Jay C. Ketchum, Detroit, secretary.

Any medical care plan organization which meets and complies with the minimum standards for medical care plans approved by the Council on Medical Service of the American Medical Association shall, on approval of its application by the Commission (A. M. C. P.) be a full member.

It has been reported to the Council that fourteen plans have been admitted to full membership, with two plans admitted as associate members.

First Joint Conference of Insurance-Medical Committees.—Some time ago the Board of Trustees of the American Medical Association authorized a committee to meet with representatives of leading insurance associations. On September 18 representatives of the leading insurance associations of the United States met with the A. M. A. committee with a view of combining efforts toward solution of common problems.

As a result of the conference two committees were appointed, a committee on cooperation and a committee on rural enrolment. The purpose of the first is to further the close cooperation among all voluntary facilities for rendering health protection, and the second committee is to study the best means of affording protection offered by the combined voluntary facilities to those in rural areas.

It is hoped that much will be accomplished as a result of this conference and the work of the two committees.

STATE AND COUNTY MEDICAL SOCIETY ACTIVITIES

Virginia.—A recently published (July 1946) pamphlet of the Virginia Council on Health and Medical Care should be of interest to all state medical societies. It outlines the purposes, plans and program to date. For copies write to Miss Ellen H. Smith, 4050 Forest Hill Avenue, Richmond, Va.

New York.—If any of the state society officers are interested in material on antivivisection it might be well to get in touch with the New York Academy of Medicine or the New York State Medical Society. The medical profession in New York State has gone through a long legislative campaign on this subject and has prepared a number of excellent articles showing the need of animal experimentation.

Massachusetts.—Lowell has instituted a program of public education via advertising. This may be a new avenue to accomplish an important purpose.

Indiana.—Lake County Medical Society has entered into a new public educational project. It is a health bulletin, to be issued monthly, entitled "The Ounce of Prevention." A cooperated effort of private health agencies and the medical society, the bulletin will go to some 4,000 teachers, public health workers and industrial officials. Eventually it is hoped that distribution can be made to the 68,000 students in Lake County schools. The National Foundation of Infantile Paralysis, the Tuberculosis Association and the American Cancer Society each contributed $1,000 to the project.

Oklahoma.—Dick Graham of Oklahoma has a new associate in his capacity as executive secretary of the Oklahoma State Medical Association. He is Clayton Fondren, graduate of the University of Oklahoma and recently returned from four years with the Army Air Forces.

North Dakota.—Another newcomer to the lay secretary field is E. F. Engebretson, executive secretary of the North Dakota State Medical Association.

Massachusetts.—The Council of Massachusetts has voted to employ a director of medical information and education. It will be a full time position, probably similar to that of the executive secretary in other state societies.

Tennessee.—The Tennessee State Medical Association, in cooperation with the local medical societies, has been carrying on a series of health broadcasts. The programs are by electrical transcription, many of which are available through the A. M. A. Bureau of Health Education. They are fifteen minute programs and cover a wide variety of subjects.

Washington Letter

(From a Special Correspondent)

Nov 4, 1946

Appointment of Atomic Energy Commisson Presages Establishment of Medical Atomic Laboratory

Following appointment of the five man Atomic Energy Commission, of which David Lilienthal is the head, Dr Edward U Condon and Dr R E Dyer, directors respectively of the U S Bureau of Standards and the National Health Institute, said they will present preliminary plans to the commission for construction of a 10 to 20 million dollar atomic laboratory in Bethesda Md It will be virtually built around several tons of uranium At least two basic lines of research will be followed The Bureau of Standards will investigate measurement of and standardization of atomic materials The National Institute of Health will work alongside the bureau, investigating radioactive isotopes of various drugs and medicines, particularly in diagnosis and treatment of cancer The National Institute of Health will also study safety precautions for workers in atomic laboratories Plans will permit the use of the atomic laboratory by other scientific bodies in the area Dr Condon said the uranium pile would be a source of neutrons, atomic particles, for the production of radioactive materials for study

Dr. Muller Learns of Nobel Prize Award at Carnegie Foundation Conference

A telephone call from Sweden informed Dr Hermann Joseph Muller, professor of zoology at Indiana University, during a conference of the Carnegie Foundation here that he had been awarded the Nobel prize for medicine and physiology The award was for his work on heredity, through his discovery that mutations in the genes of living things can be changed through exposure to x rays Dr Muller studied at Columbia University under the late Dr Thomas Hunt Morgan, who won the prize in 1933 for his work in hereditary science Dr Muller is one of three scientists named to carry on a six year research program in genetics at Indiana University, for which the Rockefeller Foundation made a grant of $95,000 Last week the American Cancer Society made a grant of $4,500 to Dr Muller to finance his work

Socialized Medicine an Issue in Election Campaign

Coincident with the windup of the Congressional election campaign on November 5, socialized medicine became an issue in Maryland politics, with the Republican candidate for the Senate, Brig Gen John D Markey having asked Democratic Governor O Conor to state his position on state medicine The G O P nominee in a statement challenged "Where does he stand on this important question, the attempt to socialize medicine? This state, the home of the greatest physicians, is vitally interested Is Mr O Conor for or against? I am unequivocally against The electorate is entitled to know where Mr O Conor stands, and he ought to speak up before November 5"

Dr Walter A Bloedorn Elected President of the Association of American Medical Colleges

Dr Walter A Bloedorn dean of the George Washington Medical School, is the first Washington physician to be elected president of the Association of American Medical Colleges which held its fifty seventh annual meeting recently in Edgewater Park, Miss He was also named association delegate to the national commission of the U S Educational, Scientific and Cultural Organization

Scientists Plan to Visit Russia to Study KR Cancer "Cure"

A group of scientists from the National Cancer Institute and other cancer specialists may visit Moscow soon to study reports that a Russian preparation known as KR dissolves cancer in human beings without injuring the patient Dr V V Parin secretary general of the Soviet Academy of Medical Sciences revealed to a conference at the U S Public Health Service that a drug developed by Dr Gregory Roskin and his wife Dr Nina Kleuva, from dead germs of Chagas disease (American trypanosomiasis) had produced 'good results' in the treatment of cancer Dr Parin, who came here at the invitation of Surg Gen Thomas Parran of the U S Public Health Service warned that this did not mean that "the problem of cancer is solved" He said that at least five years must elapse before a cancer patient is cured Fifteen Russian human "guinea pigs" were reported to have been "clinically cured" through use of the drug

Dr Parin, who is also professor of physiology at the Third Moscow Medical Institute and is in this country to inspect governmental and private research centers, spiked rumors that had been circulated that Russian medical scientists during the war transplanted limbs from cadavers to maimed persons "Corneal transplants, yes, arms and legs, no" he said Occasionally blood had been taken from corpses for transfusion, but only rarely, as it was much more practical to use living dônors In Washington he visited the National Institute of Health, National Cancer Institute, Naval Medical Research Institute and other research laboratories

Weather Bureau to Give "Storm Warnings for Hay Fever and Asthma Sufferers"

Dr W C Jacobs, Weather Bureau climatologist, reports that the agency is planning to set up a "storm warning system for hay fever and asthma sufferers' by which it will forecast twenty-four to forty eight hours in advance the arrival of an air mass laden with ragweed pollen in a given area The region having the greatest ragweed pollen intensity is southern Indiana Air currents carry the pollen hundreds and even thousands of miles, and the climatologists plan to follow these pollen concentrations and map their courses

Two Doctors Honored for Ninety-Seven Years of Service to Children

For their combined total of ninety seven-years of service to young patients at Children s Hospital here Dr Joseph S Wall, chairman, and Dr Edgar P Copeland, vice chairman, of the institution s medical staff, were honor guests at a "family party" at the hospital They joined the staff as students, Dr Wall in 1896 and Dr Copeland in 1899

Coming Medical Meetings

American Medical Association House of Delegates Supplemental Session, Chicago, Dec 9 11 Dr George F Lull, 535 N Dearborn St, Chicago 10, Secretary

Conference of State Secretaries and Editors, Chicago, Dec 7 8 Dr George F Lull 535 N Dearborn St Chicago 10, Secretary

American Academy of Allergy, New York, Nov 25 27. Dr Karl D Figley, 316 Michigan St, Toledo 2, Ohio, Secretary.

American Academy of Dermatology and Syphilology Cleveland, Dec 7 12 Dr Earl D Osborne, 471 Delaware Ave, Buffalo N Y, Secretary

American Academy of Pediatrics, Pittsburgh Nov 13 16 Dr C G Grulee 636 Church St, Evanston, Ill, Secretary.

American College of Surgeons Cleveland Dec 16 20 Dr Dallas B Phemister, 40 E Erie St, Chicago 11, Secretary

American Otorhinologic Society for the Advancement of Plastic and Reconstructive Surgery, New York, Nov 14 Dr Norman N. Smith 291 Whitney Ave, New Haven 1, Conn, Secretary.

American Public Health Association, Cleveland, Nov 12 14 Dr. R M Atwater, 1790 Broadway, New York 19, Executive Secretary.

American Society of Anesthesiologists, New York, Dec 12 Dr Curtiss B Hickcox, 745 Fifth Ave, Room 1503, New York, Secretary

National Society for the Prevention of Blindness, New York, Nov 25 27 Mrs Eleanor Brown Merrill, 1790 Broadway, New York 19, Executive Director

North Central Medical Conference St Paul Nov 10 Mr R R Rosell, 493 Lowry Medical Arts Building, St Paul, Secretary

Post Graduate Medical Assembly of South Texas, Houston, Dec 3 5 Dr M B Stokes, 229 Medical Arts Bldg, Houston, Secretary

Puerto Rico Medical Association of, Santurce, Dec 13 15 Dr Rafael A Vilar, P O Box 3866 Santurce, Secretary

Radiological Society of North America Chicago, Dec 1 6 Dr Donald S Childs, 607 Medical Arts Bldg, Syracuse 2, N Y, Secretary.

Society of Surgeons of New Jersey, Newark, Nov 20 Dr Walter B Mount, 21 Plymouth St, Montclair, Secretary

Southern Surgical Association, Hot Springs, Va, Dec 10 12 Dr Alfred Blalock Johns Hopkins Hospital, Baltimore 5, Secretary

Western Surgical Association, Memphis, Tenn, Dec 5 7. Dr Warren H Cole 1853 W Polk St, Chicago 12, Secretary.

GOVERNMENT SERVICES

ARMY

ARMY AWARDS AND COMMENDATIONS

Colonel Samuel D. Avery

The War Department recently awarded the Legion of Merit to Col. Samuel D. Avery, M. C., U. S. Army, for his services from September 1939 to June 1946. During this time, says the citation, "the production of prophylactic vaccines and other products under his supervision increased to thirty times that of 1939. He maintained the effectiveness of typhoid vaccine to such a high degree that the incidence of typhoid and paratyphoid fevers in World War II was less than one-tenth that of World War I. Through his noteworthy efforts toward the prevention from the typhoid fevers, Colonel Avery made a major contribution to the war effort." Dr. Avery, a graduate of Rush Medical College, entered the service April 25, 1941

Lieutenant Colonel Herbert S. Ripley

The War Department recently announced the award of the Bronze Star Medal to Lieut. Col. Herbert S. Ripley, M. C., O R. C., Oak Park, Ill., for meritorious achievement in Biak, Netherlands East Indies, from Oct. 15, 1944 to Aug. 1, 1945 "in connection with military operations against the enemy. As chief of the neuropsychiatric section of a large general hospital," says the citation, "Lieutenant Colonel Ripley was responsible for the planning and organization of complete facilities for the care and treatment of psychotic cases. Despite difficult working conditions and acute shortage of experienced personnel, he succeeded through unselfish and diligent labor in providing an efficient service during a period in which large numbers of patients were being received from the Philippine Island campaigns. He devoted additional time to the instruction and training of other medical officers and supervised the establishment and operation of a convalescent and rehabilitation section which received high praise from medical authorities. As a result, many patients who ordinarily would have been evacuated to the United States were rehabilitated and returned to duty in the theater. By his superior professional ability, resourcefulness and devotion to duty Lieutenant Colonel Ripley made a distinguished contribution to the care of battle casualties in the Southwest Pacific area." Dr. Ripley, a graduate of Harvard Medical School, entered the service July 15, 1942.

Major John B. Bennett

The War Department recently awarded the Bronze Star Medal to Major John B. Bennett, M. C., A. U. S., Los Angeles. The citation stated that as adviser and instructor of the 31st and 51st Medical Battalions Major Bennett "performed meritorious service from December 1941 to April 1942 in Zambales and Bataan, Luzon, Philippine Islands. He constantly visited the field hospitals, collecting stations and battalion aid stations to assure judicious use of the small supplies of medicine and to supervise treatment of the sick and wounded. Through his initiative, excellent judgment and untiring efforts, Major Bennett did much to maintain the best possible health rate and combat effectiveness among the troops in two divisions." Dr. Bennett, a graduate of Baylor University College of Medicine, Dallas, Texas, entered the service Oct. 20, 1940.

VETERANS ADMINISTRATION

ASSIGNMENTS TO TUBERCULOSIS SERVICES

The Veterans Administration has announced the appointment of the following physicians on the tuberculosis services in various Veterans Administration hospitals:

Rodger J. B. Hibbard, Los Angeles, formerly superintendent and medical director, Utah State Tuberculosis Sanatorium. Dr. Hibbard is a specialist certified by the American Board of Internal Medicine.

Harry E. Walkup, Mount Hope, W. Va., formerly chief resident, surgical service, St. Joseph's Hospital, Baltimore.

Meyer Ralph Rosenbloom, Pittsburgh, formerly resident physician at the National Jewish Hospital, Denver, and at the Pennsylvania Tuberculosis Hospital, Cresson, Pa.

Harold H. Rosenbloom, Chicago, formerly associate attending physician in tuberculosis, Cook County Hospital.

Andrew George Goesl, Milwaukee, formerly with the tuberculosis control division, U. S. Public Health Service.

Peter John Galante, Klamath Falls, Ore., formerly assistant director, Henry Phipps Institute, Philadelphia.

Cecil L. Schultz, Philmont, N. Y., formerly medical director, Columbia Sanatorium at Philmont.

Max Baumwell, Belmont, Calif., formerly resident in tuberculosis, California Sanatorium, Belmont, Calif., Central Maine Sanatorium, Fairfield, and State Sanatorium, Booneville, Ark.

Morris C. Thomas, Arlington, Va., formerly resident staff physician, Sunnyside Sanatorium, Indianapolis, and at Essex Mountain Sanatorium, Verona, N. J.

George C. Wilson, Wallingford, Conn., formerly assistant superintendent, Connecticut State Tuberculosis Hospital, Norwich, and assistant in pathology at Yale University, New Haven, Conn.

S. M. Bittinger, Sanatorium, N. C., formerly associate superintendent and medical director of the West North Carolina Sanatorium, Black Mountain. Dr. Bittinger is a specialist certified by the American Board of Internal Medicine.

Frank Peter Ilasi, Brooklyn, formerly house physician, Oakland County Tuberculosis Sanatorium, Pontiac, Mich., and on the visiting staff, Post-Graduate Hospital, Chicago.

William G. Lewis, Winslow, Ariz., formerly physician in charge of the Indian Sanatorium at Albuquerque, N. M.

Andrew Nady, Calumet City, Ill., formerly tuberculosis control physician, state of Illinois, and assistant medical director, Tuberculosis Hospital, Oak Forest, Ill.

Harold Franklin Stolz, Saginaw, Mich., formerly with the Lovelace Clinic, Albuquerque, N. M., and on the staff of St. Joseph's Hospital and Presbyterian Hospital, Albuquerque.

Samuel Phillips, Sanator, S. D., formerly assistant medical director, Los Angeles Sanatorium, Duarte, Calif., and assistant medical director, South Dakota State Sanatorium.

John J. Ahern, Boston, formerly with the sanatorium division, Boston City Hospital, and assistant professor of medicine (tuberculosis), Tufts College Medical School.

PERSONALS

Dr. Roy R. Kracke, dean of Alabama Medical College at Birmingham, has been appointed to an advisory committee comprising eighteen physicians from throughout the United States to aid Gen. Omar Bradley, administrator of the Veterans Administration. The committee will meet four times a year.

Miss Dorothy V. Wheeler, executive secretary of the New York City Nursing Council, has been appointed director of nursing service in the Veterans Administration department of medicine and surgery. Miss Wheeler, a native of Missouri, obtained her R.N. from Washington University, St. Louis, in 1935 and her bachelor of science degree from Ohio State University in 1938.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Abrams, Maurice J.	Brewton
Cameron, John M.	Faunsdale
Childs, Edward A.	Montgomery
Emfinger, Orizaba	S. Birmingham
Kern, Fred Jr.	Birmingham
Ray, Weldon A.	Tuscaloosa

Arizona

Friedlander, Saul	Phoenix
Hata, Herbert T.	Arizona
Kettenbach, Edward L.	Tucson

Arkansas

Carpenter, Gray E.	Elaine
Clowney, Albert R.	Huttig
Denning, Philip P.	Levy
Hill, Harlan H.	England
Hipp, Harold R.	Batesville

Colorado

Beuchat, Eugene S.	Trinidad
Coppinger, William R.	Durango
Goodman, Nelson	Denver
Hill, Kenneth A.	Denver

District of Columbia

Brotman, Alfred B.	Washington
Chapman, Ervin N.	Washington
Goumas, Marcus P.	Washington
Long, James W.	Washington
Reswick, Murray	Washington

Florida

Appleyard, Arthur Jr.	St. Petersburg
Carter, Edward F. Jr.	Tampa
Cassel, Chester	Miami
Gatling, Willard R.	Orlando

Georgia

Adams, Guy H.	East Point
Banks, Rafe Jr.	Gainsville
Bryans, Charles I. Jr.	Augusta
Clements, Fred N.	Adel
Davis, Albert M.	Atlanta
Hughston, Jack C.	Columbus
Paullin, William L. Jr.	Pelham

Iowa

David, John J.	Bettendorf
Eaton, Robert C.	Iowa City
Fishman, Harlow Jr.	Cherokee
Garner, John W.	Des Moines
Gugle, Lloyd J.	Iowa City
Harnagel, Edward E.	Des Moines
Powers, John L.	Dickens
Vandenberg, Allison R.	Pella

Kansas

Brown, Adrian J.	Kansas City
Brownell, Morton E. Jr.	Wichita
Burkett, Norman A.	Goessel
Butcher, Thomas P.	Emporia
Coldwell, William I. Jr.	Kansas City
Goldenberg, Erwin D.	Kansas City

Kentucky

Bryant, Thomson R. Jr.	Lexington
Castile, Eugene A.	Louisville
Childs, Wesley A.	Ford
Hathaway, Frederick H.	Louisville
Jiroch, John T.	Louisville
Lynn, Ralph D.	Louisville

Louisiana

Broyles, Jerald O.	Shreveport
Cullick, Louis	Shreveport
Fenton, Thomas T.	Baton Rouge
Hancock, Warren E.	Shreveport
Hasseltine, Lee L.	Carville
Hodge, James B. Jr.	Baton Rouge
Marstaller, William E.	Pineville

Michigan

Anderson, Francis C.	Cadillac
Boland, Grant L.	Ann Arbor
Bovill, Edwin G. Jr.	Grosse Pointe
Bruer, Edgar S.	Detroit
Bruer, Edwin L.	Detroit
Bulthuis, Jerry E.	Holland
Burnett, John E. Jr.	Ann Arbor
Burroughs, Frank M. Jr.	Grand Rapids
Campbell, John S.	Manistee
Fink, George C.	Ann Arbor
Gehringer, Norman F.	Pontiac
Gordy, Philip D.	Ann Arbor
Hackett, Thomas L.	Detroit
Kretschmer, Thomas V.	Saginaw
Larned, Richard I.	Detroit
Soriano, Jesus L.	Battle Creek
Wiant, John L.	Detroit

Minnesota

Banner, Edward A.	Rochester
Bergan, Robert O.	Clinton
Black, William A.	Rochester
Blake, Paul S.	No. Hopkins
Cooper, Wilford L.	Rochester
Coulter, Harold E.	Lamberton
Dwinnell, Leonard A.	St. Paul
Eichhorn, Edmund P. Jr.	Minneapolis
Everson, Tilden C.	Minneapolis
Fahlund, George T. R.	Rochester
Foster, Orley W.	St. Paul
Sauer, William G.	Rochester
Seiler, Kingman G.	Red Wing

Mississippi

Ainsworth, Joseph T.	Raymond
Balkin, Gilbert	Drew
Bonds, James W.	Holly Springs
Flagg, Geddes B. Jr.	Gulfport
Guynes, Henry C.	Woodville
Hirsch, Jerome B. Jr.	Greenville
Murry, Abel V.	Ripley

Montana

Calvert, Matthew W.	Laurel
Clapp, Roger W.	Butte
Harmon, George A.	Ft. Harrison
O'Donnell, James J.	Lone Pine
Randall, Warren H.	Miles City

Nebraska

Ainlay, George W. Jr.	Omaha
Bunce, Paul L.	Omaha
Dickinson, Louis E. Jr.	Ravenna
Feehan, John J. Jr.	Clarks
Gass, Charles C.	Kearney
Gessford, Howard H.	Arthur
Hollister, Nathaniel R.	Irvington
Segard, Edwin C.	Dannebrog

New Mexico

Buckholts, Water H.	Butte
Dillon, Jackson C.	Clovis
Grossman, Jack W.	Albuquerque
Herzberg, Milton	Shiprock
Latimer, Earl A. Jr.	Dexter
Nalty, Walter C.	Fort Bayard
Simms, Albert G. II	Albuquerque
Smith, Clyn Jr.	Clovis

North Dakota

Armstrong, William B.	Fargo
Craven, James P.	Willston
Finsten, Herman L.	Grand Forks
Uthus, Oliver S.	S. Fargo

Oklahoma

Barb, Thomas J. Jr.	Oklahoma City
Beumer, Oliver C.	Gage
Bodine, Charles D.	Oklahoma City
Goodwin, Rufus C.	Oklahoma City
Waldrop, William L.	Oklahoma City

Rhode Island

Dennen, William I.	Providence
Giunta, Frank	Providence
Lambiase, Joseph J.	Providence

South Carolina

Adams, Abram E.	Greenwood
Bryson, James Y.	Laurens
Fellers, Fred H.	Columbia
Grant, Lonnie C. Jr.	Columbia
Lawrence, Kenneth G.	Effingham

South Dakota

Dressel, Paul A.	Elkton
Eneboe, Edward M.	Viborg
Tammen, Henry	Yankton

Tennessee

Arnoult, Mathew B.	Memphis
Bernstein, William C.	Knoxville
Bushart, James H.	Union City
Cannon, George M.	Jackson
Cochran, Hiram D.	Memphis
Colbrunn, Julius A. Jr.	Memphis
Conway, John P.	Memphis
Davis, George T. Jr.	Bristol
Gibson, Rae B.	Greenville
Gray, Alden H.	Kenton
Hughes, Felix A. Jr.	S. Nashville
Peyton, John H.	Lebanon

Utah

Balken, John B.	Salt Lake City
Bubblis, John L.	Salt Lake City
Gasser, George W.	Salt Lake City
Henderson, Jay H.	Salt Lake City
Holbrook, Von G.	Salt Lake City
Wyler, Glenn H.	Payson

Vermont

Andrew, Bertrand J.	Middlebury
Bittinger, Ralph E. Jr.	Rutland
Colombo, Harry L.	Montpelier
Fregosi, Albert H.	Proctor
Guilmette, Frederic J.	Rochester
Sennett, Edward J.	Poultney
Wakefield, Horatio P.	Burlington
Wolk, Arthur D.	Rutland
Woodruff, James G.	Barre

Virginia

Albertson, Horace A.	Richmond
Catron, Stuart H. Jr.	Marion
Chilton, William C. Jr.	Appomattax
Comess, Raymond R.	Norfolk
Dickie, Herbert G. Jr.	Roseland
Gill, Fleming W.	Richmond
Tavenner, Michael C.	S. Norfolk

Washington

Brinson, Ed L. Jr.	Bellingham
Friedman, Alan J.	Seattle
Gamon, Wilfred A.	Colbert
Reynolds, Richard M.	Kent
Sears, Thad P.	Spokane
Spickard, Warren B.	Seattle

Wisconsin

Baehr, Louis T.	Berlin
Becker, Barney B.	Milwaukee
Brillman, Lester P.	Milwaukee
Cash, Isadore I.	Milwaukee
Graham, Bruce D.	Roberts
Grant, Robert S.	Milwaukee
Hank, George C.	Madison
Hennen, Richard J.	Jefferson
Hogben, Charles A. M.	Madison
Humke, Everett W.	Eau Claire
Lapham, Landon M.	Cushing
Larsen, Roy B.	Waunatee
Rosen, Simon M.	Milwaukee
Smith, Gordon L.	Kendall

MEDICAL OFFICERS RELEASED BY THE NAVY

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

Arkansas

Agar, Drew F.	Little Rock
Bassett, John W.	Pine Bluff
Bond, Sidney D. Jr.	Crawfordsville
Bramlett, Espie B.	Clarksville
Brizzolara, Aristo J.	Little Rock
Cothern, William R.	Morrilton
McCaskill, Melvin R.	Little Rock
Pickren, John W.	Salem
Pickren, Thomas R.	Salem
Reagan, Grady W. Jr.	Little Rock
Robbins, Allen I.	Conway
Thompson, Lawrence L. Jr.	Little Rock

California

Benn, James J. Jr.	Oakland
Coye, Robert D.	Glendale
Doval, John H.	Sacramento
Edmister, Ivan F.	Oakland
Herzer, Frederick	South Pasadena
Hine, Fred B.	Glendale
Ivers, Thomas R.	San Francisco
Jones, George W.	Pomona
Lynch, James M.	Pasadena
MacLaggan, James C.	San Diego
Morris, Robert R.	San Francisco
Nelson, Waldo R.	Los Angeles
O'Donnell, Joseph E.	Long Beach
Pearson, Alvirdo W.	Los Angeles
Soldmann, William T.	San Diego
White, Lawrence F.	Los Angeles

Delaware

Neese, Harry G. Jr.	Wyoming

Georgia

Burson, Ernest N. Jr.	Decatur
Combs, James M.	Covington
Hutchinson, William L.	La Grange
Lewis, James W.	La Grange
Neal, Jule C. Jr.	Rome
Roberts, Henry L.	Macon
Stevenson, Richard H.	Camilla

Illinois

Chapman, Asa Z.	Evanston
DeBord, Robert A.	Princeville
Gelman, Webster B.	Chicago
Gray, Seymour J.	Chicago
Hindman, Homer A. Jr.	Urbana
Long, Allen H.	Rockford
Madsen, Harold J.	Chicago
Method, Harold L.	Chicago
Murphy, John I.	Chicago
Owen, James G.	Monmouth
Pierandozzi, John S.	Chicago Heights
Sbertoli, Maurice W.	Chicago
Schaffner, Harold B.	Chicago

Maine

Burnett, Claude A., Jr.	Saco
Chasse, Richard L.	Waterville
Cornell, Robert C.	Cumberland Mills
Johnson, Donald G.	Bar Harbor
Taylor, Robert L.	Kingfield
Wilson, Ross L.	Gray

Massachusetts

Buckley, Arthur F.	New Bedford
Butman, Douglas E.	Waltham
Ceplikas, Thomas A.	North Andover
Hartman, Thomas L.	Boston
Hoelzel, Norman R.	North Chelmsford
Kron, Rinaldo V.	Boston
Leary, Theodore M.	Arlington
Meissner, William A.	Brookline
Mekelburg, Abraham D.	Chelsea
Ohrenberger, Henry W.	Dorchester
Sullivan, Philip B.	Lawrence
Sweeney, William J.	Woburn
Taymor, Melvin L.	Boston
Whitney, Byron V. B.	Boston
Wilson, Robert F.	Andover

Missouri

Bareta, John	Kansas City
Collison, Robert M.	St. Louis
Dietrich, Sanford R.	St. Louis
Freund, Harold G.	St. Louis
Keenoy, John J.	St. Louis
Lilly, Terry E. Jr.	Kansas City
McAfee, Chester A.	St. Louis
Quinn, Edward L.	Lockwood
Roth, John J.	St. Louis
Shank, Robert E.	St. Louis

Montana

Bourdeau, Emory J.	Missoula
Bridenbaugh, Richard B.	Billings
Sather, Paul O.	Troy

Nebraska

Anderson, Frank J.	Cody
Anderson, Gustave T.	North Platte
Artist, Elmer J.	Benkelman
Baer, Lesem J.	Omaha
Fitzpatrick, Hugh F.	Omaha
Hranac, Charles E.	David City
Jensen, Werner P.	Omaha
Meier, Woodrow W.	Oshkosh
O'Connor, John W.	Kearney
Pfeifer, LaVerne F.	Lincoln
Robbins, Howard M.	West Point
Schlichtemeier, Ellis O.	Nehawka
Smith, Arthur L. Jr.	Lincoln
Wahl, John W.	Omaha
White, Donald E.	Lincoln
Worden, Ralph E.	Omaha

New Hampshire

O'Neil, Roger W.	Nashua
Thomson, Charles R.	Exeter
Watson, Thomas R. Jr.	Portsmouth
Woodworth, Harold C.	Durham

New Jersey

Burrill, Benjamin B. Jr.	Sparta
Carroll, Bruce J.	Plainfield
Dreskin, Erving A.	Dunellen
Franklin, Charles M.	Princeton
Guito, Francis J.	Bradley Beach
Kunkel, Henry G.	Princeton
Lane, Edgar W. Jr.	Bloomsbury
McKinney, Thomas S.	Moonachie
Perr, Herbert M.	Newark
Pierson, Howard W. Jr.	Plainfield
Raffetto, Joseph F.	Manasquan
Snowwhite, Arthur B.	Elizabeth
Sullivan, Thomas W.	Jersey City
Waddill, Samuel G. F.	Passaic
Young, Alfred D.	Far Hills

Oklahoma

Barno, Alex	Hartshorne
Barry, George N.	Oklahoma City
Boyd, Hugh L.	Bristow
Combs, Leon D.	Davenport
Donnell, John J.	Oklahoma City
Doudna, Huebert E.	Oklahoma City
Guthrey, George H.	Cardin
McCauley, Donald W.	Okmulgee
Rollins, James H.	Ardmore
Spangler, Arthur S.	Pauls Valley
Young, Millington O.	Oklahoma City

Oregon

Berglund, George A. J.	Portland
Brand, John W.	Portland
Duff, Ivan F.	Adams
Finley, Knox H.	Portland
Kliewer, Paul G.	Albany
Lee, Gilbert P.	Baker
Marcum, Robert W.	Portland
Seal, Sam Howard	Eugene
Sittner, Wilhelm J.	Portland
Tyler, Frank H.	LaGrande
Van Zyl, Kenneth C.	Portland

Rhode Island

Cranor, John R. Jr.	Howard
Dunn, Paul F.	Providence
Hogan, John P.	Providence
McVay, John F.	Pawtucket
Peckham, Frederick G.	Newport

South Carolina

Ball, Frederic M.	Charleston
Boatwright, Harry	Seneca
Boylston, Bedford F.	Aiken
Boyter, Henry H.	Woodruff
Dudley, Frederick D.	Bennetsville
Ellis, Ernest B.	Martin
Lynch, Kenneth M. Jr.	Charleston
Rawl, Alfred E. Jr.	Navy Yard

Tennessee

Coors, George A.	Memphis
Davis, Tudor B. C.	Memphis
Diamond, William D.	Memphis
Driver, Leslie R. Jr.	Bristol
Earnest, Charles R. Jr.	Knoxville
Greene, George G.	Memphis
Grimmett, Matthew H. III.	McMinnville
Hayes, Tuckey, J. T. Jr.	Knoxville
Hutson, William F.	Knoxville
James, Hal P.	Memphis
Karr, Howard H.	Chattanooga
Lyle, William G.	Clarksville
Meyer, Alphonse H. Jr.	Memphis
Petrone, Michael A.	Nashville

Texas

Acker, Julian H.	Dallas
Addison, Jack J.	Dallas
Anthony, James M.	Austin
Barker, Edward C.	Mercedes
Clawater, Earl W. Jr.	Tyler
Duflot, Leo S. M.	Canyon
Garcia, Joseph I., Jr.	Brownsville
Goodall, Edwin	Valley Mills
Halley, Bonnie C. Jr.	Temple
Hallum, Basil A., Jr.	Brady
Hardy, Sidney B.	Houston
Hays, Robert D.	Brady
Kaplan, Harry L.	Dallas
King, Carey G. Jr.	Dallas
Lay, James V. M.	Galveston
Lee, James F.	Dallas
Little, John F.	Cleburne
McBridge, James O.	Fort Worth
Mattison, Myron D.	Donna
May, Henry K.	San Antonio
Myers, Gordon S.	Brownsville
Norris, Ronald F.	LaPorte
Payne, Virgil M. Jr.	Dallas
Riddel, Roy L. Jr.	Lubbock
Seybold, William D.	Austin
Smyth, Olin T. Jr.	Cleburne
Stampfli, Frank V.	El Paso
Stiernberg, Royall C.	Galveston
Taylor, Thomas U., III	Fort Worth
Wales, Philip A.	Florence

Washington

Davidson, James D.	Edmonds
Degge, James H., Jr.	Everett
Gable, Charles M.	Everett
Hankamp, LeMar J.	Lynden
Jarvis, Rodney M.	Seattle
Jones, Grodon E.	Seattle
Lyda, Wood	Seattle
Maddux, Richard H. Jr.	Tacoma
Meade, Thomas N.	Goldendale
Mowery, Charles R. Jr.	Spokane
Mueller, Harold D.	Seattle
Nichols, Samuel I.	Shelton
Patton, Matthew M.	Spokane
Peterson, Heyes	Olympia
Power, John L.	Seattle
Sim, Van Murray	Olympia

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education and public health.)

ARKANSAS

District Meeting.—The Fifth District Medical Society met in Camden, October 3, to hear the following speakers:

Dr. Paul M. Ramey, Temple, Texas, The Surgical Treatment of Subdiaphragmatic Abscess.
Dr. Clyde A. Stevenson, Temple, Texas, Recent Advances in Treatment of Carcinoma of the Cervix.
Dr. Henry K. Wade, Hot Springs, Legislative Trends.
Dr. William R. Brooksher, Fort Smith, Veterans Administration Program of Medical Care.

CONNECTICUT

Institute of Occupational Medicine.—The establishment of an Institute of Occupational Medicine and Hygiene at Yale University was announced October 29. Dr. Ronald F. Buchan, newly appointed assistant professor of industrial medicine, has been named head of the institute with the title of clinical director, effective November 1. The primary aims of the institute are:

The training of medical students and industrial physicians, based on the belief that occupational medicine and hygiene is now a specialty.

Special graduate instruction, together with the opportunity for research in the field of occupational medicine and hygiene, which will be available to graduate students in medicine, nursing, public health and engineering.

Research in occupational medicine and hygiene, in the belief that the maintenance of active research in such an important field is of teaching value to the intelligent student.

Consultation. The institute will be designed to assist industrial concerns on certain practical questions in the same fashion in which the clinicians in the school of medicine assist their colleagues in the practice of medicine with regard to medical, surgical or public health problems.

The program will be supervised by a committee composed of the following members of the Yale faculty: Dean Blake, serving ex officio; Dr. William T. Salter, professor of pharmacology; Dr. George M. Smith, research associate in anatomy; Ira V. Hiscock, Sc.D., professor of public health, and Dr. John R. Paul, professor of preventive medicine, chairman. This committee will serve as the coordinating group, which will work with Dr. Buchan, the clinical director, in planning the work of the institute at the inauguration of the program. Dr. Buchan, who will sit with the committee, has been practicing industrial medicine in Hartford, where he has been concerned primarily with the organization of medical services for a group of small industrial plants. One of the main teaching functions will be concerned with instruction to all medical students at Yale. This will include special lectures to fourth year students and the opportunity, when the occasion arises, to work as apprentices in well established medical departments of large industries. The special graduate instruction which will be available to graduate students in medicine, nursing, public health and engineering will be integrated and directed by a well organized and special division of the school of medicine. Assistance will also be given in the provision of in-service training courses and in the development of programs for the rehabilitation of workmen convalescent from injury or illness. The research work which the school of medicine and other departments of the university have carried on in subjects allied with industrial medicine will be continued and, where necessary, expanded. These include toxicology, industrial poisons, noxious gases, fumes, dust ventilation and sanitation. In the field of consultation the institute will not compete with the type of service offered by the bureau of industrial hygiene of the Connecticut State Department of Health but will supplement these programs through the facilities of Yale's staff, laboratories and libraries. The facilities of the various schools at Yale concerned with different aspects of occupational medicine will be used as needed. The Connecticut State Medical Society has appointed a committee to serve as liaison with the work of the institute. The members of this committee are Dr. Creighton Barker, New Haven, executive secretary of the society; Dr. Thomas P. Murdock, Meriden, and Dr. Charles F. Yeager, Bridgeport. The initial funds to finance the inauguration of the program were raised through a committee headed by Eugene E. Wilson, Hartford, vice chairman of the United Aircraft Corporation, assisted by F. Thatcher Lane, New Haven, president of the Seamless Rubber Company, who served as vice president.

ILLINOIS

Chicago

University News.—Dr. Einar Lundsgaard, professor of physiology and director of the Institute for Medicine and Physiology, University of Copenhagen, Denmark, lectured at the University of Illinois College of Medicine, October 30, on "Muscle Metabolism."

Medical Technologists.—Ruth Feucht, M.T., was chosen president-elect of the Chicago Society of Medical Technologists at a recent meeting and Helen S. MacVeagh, M.T., was installed as president. Cecelia M. Kortuem, St. Vincent's Infant and Maternity Hospital, 721 North LaSalle Street, is the corresponding secretary. The group meets the third Thursday of each month from October through June. The society is an affiliate of the American Society of Medical Technologists, which will hold its annual convention in the Shirley-Savoy Hotel, Denver, June 30-July 2.

Hamilton Bailey Lectures on Salivary Gland.—Mr. Hamilton Bailey, noted surgeon and fellow of the Royal College of Surgeons, London, England, lectured at the American Hospital, October 30, on "Surgery of the Salivary Glands." The lecture was under the auspices of the Clinical Society of the American Hospital. Mr. Bailey, on conclusion of a tour of the Headquarters of the American Medical Association, October 29, was guest at a luncheon given by officials of the Association. He will speak at the University of Virginia and in other medical centers before returning to England.

INDIANA

Ninety-Seven Years of Age.—Dr. Wilson T. Lawson, Danville, where he has been practicing for sixty-eight years, celebrated his ninety-seventh birthday recently. Dr. Lawson is said to be the oldest living graduate of Wabash College, where he took his premedical work. He has been secretary for many years of the Hendricks County Medical Society and is still in active practice.

KENTUCKY

State Medical Election.—At a recent meeting of the Kentucky State Medical Association Dr. Francis G. Aud, Louisville, was named president-elect and Dr. Elbert W. Jackson, Paducah, was installed as president. Other officers include Drs. Robert W. Robertson, Paducah, Lawrence T. Minish Sr., Frankfort, and Samuel A. Overstreet, Louisville, vice presidents, Dr. Woodford B. Troutman, Louisville, treasurer, and Dr. Philip E. Blackerby, Louisville, secretary. The association's distinguished award went to Dr. Smithfield Keffer, Grayson, who has held every office in the Carter County Medical Society. The E. M. Howard Memorial Award went to Dr. John E. Kincheloe, Hardinsburg, who recently received nationwide publicity when Kincheloe Day was observed in Breckenridge County to honor the physician's forty-seven years of practice. The association adopted a three point hospital standardization program calling for:

Kentucky Medical Association encouragement of efforts of the hospital advisory committee to the state board of health to have enacted a law providing for "minimum hospital standards" in Kentucky.

Establishment at the University of Kentucky and the four state teachers' colleges of first class schools of nursing in conjunction with hospitals in their respective environs.

A survey, if funds are made available, for the study of the educational and other personnel training facilities for the people who must lead our health program.

The hospital standardization committee, composed of Drs. Hugh L. Houston, Murray, William L. Tyler, Owensboro, and Ulysses G. Brummett, Middlesboro, pointed out that Kentucky is one of the few states without laws regulating hospitals and stated that "without such laws it will be ineligible to participate in federal grants and programs."

MASSACHUSETTS

Personal.—Dr. Charles P. Sheldon has been appointed chief of the service of obstetrics and gynecology at the Faulkner Hospital, Jamaica Plain, Boston, and Dr. James A. Halsted chief of the medical service, to succeed Dr. Raymond S. Titus and Dr. Channing Frothingham, who have reached the retirement age.

Changes in Faculty at Boston University.—Lloyd C. Fogg, Ph.D., associate professor of microscopic anatomy, has been appointed registrar at the Boston University School of Medicine, effective at the beginning of the current academic year. Dr. Fogg received his degree of Ph.D. at Columbia University in 1931 and has been a member of the Boston faculty since 1940.——Kenneth E. Penrod, Ph.D., Iowa City, has been appointed assistant professor of physiology at Boston University, effective August 1.

Harvard Expands Public Health Program.—Dr. Hugh R. Leavell, formerly assistant director, division of medical sciences, Rockefeller Foundation, has been appointed to the chair of public health practice at Harvard University Graduate School of Public Health, filling the vacancy that occurred with the death of Dr. Edward G. Huber in July. Dr. John C. Snyder, formerly of New York, has been named to a newly created chair of public health bacteriology. In addition to degrees which presuppose qualifications as doctor of medicine, the school has added the degrees of master of science in hygiene and doctor of science in hygiene, open to investigators. Thus research on problems connected with public health, as well as instruction, will be augmented. During the war Dr. Leavell served as deputy director of health in the European office of UNRRA. Dr. Snyder was a member of the U. S. Typhus Commission when it was organized during World War II. Since his release from the army in 1945 he has been in charge of a program of typhus investigation sponsored by the International Health Division.

MISSOURI

Ernest Sachs Retires.—Dr. Ernest Sachs, a member of the faculty of Washington University School of Medicine, St. Louis, for thirty-five years, has retired as professor of neurologic surgery to become professor emeritus. He will continue his work at Barnes and Children's hospitals and will also continue to train graduate students in neurologic surgery.

District Meeting.—The First Councilor District Society and the St. Joseph Clinical Society held a clinical conference at the Robidoux Hotel, St. Joseph, September 19, under the presidency of Dr. Frederick Gregg Thompson, St. Joseph, for the clinical society and Dr. Harold E. Petersen, St. Joseph, for the district society. Among the speakers were:

Dr. Ronald M. Buck, St. Joseph, Glass Cloth as a Wound Dressing in Orthopedic Surgery.
Dr. Thompson E. Potter, St. Joseph, Treatment of Varicose Veins: Presentation of Two Cases.
Dr. Roy Smith, Rochester, Minn., Treatment of Cardiac Failure.
Raymond McIntyre, St. Louis, State Medical Association Problems.
F. Kenneth Helsby, Kansas City, Prepaid Hospitalization and Medical Care.
Dr. Herbert C. Miller, Kansas City, Recent Advances in the Study of Rheumatic Fever.
Dr. James O'Donoghue, St. Joseph, Intrathoracic Calcifications.
Dr. Wilbur P. McDonald, St. Joseph, Wound Closure in Compound Fractures.
Dr. James B. Brown, St. Louis, Military Plastic Surgery.
Dr. Howard B. Goodrich, Hannibal, Program of the Missouri State Medical Association.

Appointment in Occupational Therapy.—Miss Sue Hurt, field secretary of the American Occupational Therapy Association and for several years director of the department of occupational therapy of the Richmond Professional Institute of the College of William and Mary, Richmond, Va., has been appointed director of the department of occupational therapy, Washington University School of Medicine, St. Louis. The department was started in 1918 as the St. Louis School for Reconstruction Aides and is said to be the first training center of its kind west of the Mississippi. In 1919 the name was changed to the St. Louis School of Occupational Therapy. Extension of the program was made possible in 1934 by an association with Washington University, and the name was again changed to St. Louis School of Occupational and Recreational Therapy. A subsequent bequest by Rachel Stix Michael brought about a closer affiliation with the university, and in February 1946 the school was established as a department in the division of auxiliary medical services. This division is conducted under the direction of the dean and the executive faculty of Washington University School of Medicine.

NEW YORK

New Tumor Service.—Dr. Lionel S. Auster, attending surgeon at the Bronx Hospital, has been named head of the newly created tumor service at the hospital. The service is replacing the former tumor clinic and conference unit which he headed prior to his entrance into the naval service in 1941, operations of which were suspended during the war years. The new department, which will provide comprehensive diagnostic, teaching and treatment service for both ambulant and inpatient oncologic cases, was to start functioning in October.

Faculty News.—Elmer H. Stotz, Ph.D., head of the division of food science and technology at the New York State Agricultural Experiment Station, Geneva, has been appointed professor of biochemistry and chairman of the department of biochemistry, University of Rochester School of Medicine and Dentistry. He will succeed Walter R. Bloor, Ph.D., professor of biochemistry and pharmacology and associate dean of the school of medicine when Dr. Bloor retires from the faculty next June. Dr. Bloor has been a professor at the medical school since 1922. Dr. Stotz joined the Agricultural Experiment Station staff in 1943 after serving for five years as director of laboratories of McLean Hospital and instructor in biochemistry at Harvard Medical School, where he specialized in investigations of tissue metabolism and enzyme chemistry. Appointed as head of the division of chemistry at the experiment station to succeed Donald K. Tressler, Ph.D., Dr. Stotz was named head of the division of food science and technology in 1945 when the new division was created by the board of trustees of Cornell University by merging the divisions of bacteriology and chemistry.

New York City

Changes in Health Personnel.—Dr. George James, assistant district health officer of Middletown, was appointed to a similar position for Greene and Ulster counties with headquarters at Kingston, effective September 1. Dr. James succeeds Dr. Berwyn F. Mattison, Albany, who resigned to become health officer of Yonkers (The Journal, October 19, p. 400).

Normal and Atypical Pigment Cell Growth.—A conference on the biology of normal and atypical pigment cell growth will be held November 15-16 at the American Museum of Natural History under the auspices of the section of biology of the New York Academy of Sciences. Among the speakers will be:

Dr. George T. Pack, The Melanoma Problem.
Graham P. DuShane, Ph.D., Palo Alto, Calif., Origin and Development of the Melanophores.
Dr. Glenn H. Algire, Bethesda, Md., Growth and Vascular Reactions of Transplanted Mouse Melanomas.
James B. Hamilton, Ph.D., Brooklyn, Influence of the Endocrine Status on Pigmentation in Man and in Mammals.
Frank H. J. Figge, Ph.D., Baltimore, Chemical Nature of Melanin.
Jesse P. Greenstein, Ph.D., Bethesda, Md., Chemistry of Melanomas.
Dr. Dennis L. Fox, La Jolla, Calif., Some Features of Melanoid Biochromy in Animals.

Faculty Appointments and Promotions.—Dr. James M. Winfield, associate professor of surgery, Wayne University College of Medicine, Detroit, has been appointed professor of surgery, attending surgeon and educational director of the department of surgery at the New York Medical College, Flower and Fifth Avenue Hospitals. During World War II, Dr. Winfield served as a colonel in the Army Medical Corps. He was surgical chief of the 36th General Hospital and Hospital Center consultant. He will have as deputies in each of the hospitals affiliated with the college the following, who will assist with the daily supervision and direction of the teaching program in those institutions: Dr. Walter L. Mersheimer, assistant professor of surgery, who will be assigned at the Metropolitan Hospital; Dr. Allan S. Graham, instructor in surgery, assigned to the Flower and Fifth Avenue Hospitals, and Dr. Nicholas Tiscione, assistant clinical professor, assigned to the Queens General Hospital. The assignment to the City Hospital has not yet been made. Claude M. McFall, Ph.D., who has been head of the anatomy department at George Washington University School of Medicine, Washington, D. C., since 1939, has been appointed visiting professor of anatomy for the current academic year. New appointments include Dr. Preston A. Wade, clinical professor of surgery; Dr. James H. Kidder, associate clinical professor of surgery; Dr. Wilfred F. Ruggiero, associate clinical professor of surgery, and E. Lawrence House, Ph.D., assistant professor of anatomy. Promotions include:

Roger C. Gay, Ed.M., assistant dean.
James W. Benjamin, Ph.D., professor of anatomy and assistant to the dean.
Lois C. Lillick, Ph.D., associate professor of bacteriology and active director of the department.
Dr. Francis D. Speer, associate professor of clinical pathology and director of the laboratory.
Dr. Lawrence B. Slobody, associate professor in pediatrics and associate attending pediatrician.
Dr. Charles A. Turtz, associate clinical professor of ophthalmology and associate attending ophthalmologist.
Dr. Herman Robbins, assistant professor of pediatrics and assistant attending pediatrician.
Dr. Jerome G. Kaufman, assistant professor of medicine and assistant attending physician.
Dr. Samuel L. Saltzman, assistant clinical professor of ophthalmology.

OKLAHOMA

New Position as Health Consultant.—Milton L. Shurr, formerly health consultant in Omaha, has been named director of public health education and coordination for Tulsa County, a newly created position within the Tulsa City Health Department. One of Mr. Shurr's activities will be to coordinate functions of health and welfare agencies in the city. According to the *Bulletin* of the Tulsa County Medical Society the present experimental setup for three years is hoped to become a permanent part of health education activities in Tulsa. The position is jointly sponsored by the Tulsa Council of Social Agencies and participating members.

PENNSYLVANIA

Personal.—Dr. Merl G. Colvin, Williamsport, medical director of Lycoming County for the past seven years, has been appointed a member of the state advisory health board.

Philadelphia

Annual Banquet.—The sixtieth annual banquet of the Association of Ex-Resident and Resident Physicians of the Philadelphia General Hospital will be held on Tuesday, December 3, at the Bellevue-Stratford Hotel, Broad and Walnut streets. The guest of honor will be Dr. Edward A. Schumann. Reservations may be had by writing to the secretary-treasurer, Dr. Robert C. McElroy, 133 South 36th Street, Philadelphia 4.

Esmond Long Named Director of Research for Tuberculosis Association.—Dr. Esmond R. Long, director of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis, has been appointed director of research of the National Tuberculosis Association. Dr. Long was president of the association in 1936 and has been a member of its Committee on Medical Research since 1929. He received the Trudeau Medal for tuberculosis research in 1932.

TEXAS

State Medical Election.—At a recent meeting of the State Medical Association of Texas Dr. Britton E. Pickett Sr., Carrizo Springs, was chosen president-elect, and Dr. Claude C. Cody Jr., Houston, was installed as president. Other officers include Drs. Samuel D. Whitten, Greenville, Charles P. Yeager, Corpus Christi, and James M. Campbell, Goldthwaite, vice presidents, Dr. Holman Taylor, Fort Worth, secretary and Dr. Khleber H. Beall, Fort Worth, treasurer.

University News.—A new course dealing with the applications of physics to physiology and medicine has been inaugurated at the University of Texas Medical Branch, Galveston, under the auspices of the departments of physiology and radiology. The new course is designed as an orientation course for first year. students and will be given once weekly during the first semester. Howard G. Swann, Ph.D., assistant professor of physiology at the University of Texas, has received a grant of $10,000 from the Army Research Program for studies on aviation physiology. During the war Dr. Swann was associated with the Aviation Physiology Laboratories at Wright Field. The grant is for the purpose of assisting in the continuance of studies undertaken by Dr. Swann while at Wright Field. Wilbur A. Selle, Ph.D., professor of physiology at the medical branch, is surveying American medical centers under the auspices of the Baruch Committee for Physical Medicine in order to develop satisfactory methods for teaching the medical application of physics to undergraduate medical students. Dr. Truman G. Blocker Jr., on terminal leave as colonel in the Medical Corps of the U. S. Army, and formerly in charge of Wakeman General Hospital, Camp Atterbury, Ind., is returning to the University of Texas Medical Branch as professor of plastic and maxillofacial surgery. W. D. Collings, Ph.D., has resigned as professor of physiology at the University of Texas Medical Branch to become assistant professor of physiology at the State University of Iowa College of Medicine, Iowa City, and Dr. Stephen Weisz has resigned as associate professor of neuropsychiatry and assistant director of the State Psychopathic Hospital to become associate professor of neuropsychiatry at Southwestern Medical College, Dallas.

VERMONT

State Medical Election.—Dr. Benjamin F. Cook, Rutland, was named president-elect of the Vermont State Medical Society at its meeting in Burlington, October 2. Dr. Cook will not take office as president until 1948. Dr. Frank C. Angell, Randolph, was installed as president. Other officers elected are Dr. Hiram E. Upton, Burlington, vice president, Dr. Theodore H. Harwood, Burlington, secretary, and Dr. David Marvin, Essex Junction, treasurer. The establishment of a state health council to coordinate the work of the society with other health agencies and with labor, agriculture and industry was advocated by the house of delegates. It was also decided to develop and extend a voluntary prepayment medical care plan throughout the state and support the college of medicine of the University of Vermont in its effort to provide training to physicians for rural areas.

WEST VIRGINIA

Publicity Director for Cancer Control.—Calvert L. Estill, Charleston, has been appointed publicity director for the West Virginia Cancer Society, effective October 1. Mr. Estill, who was formerly director of public welfare of West Virginia, is staff correspondent for the Ogden chain of newspapers.

Effect of Prenatal Blood Test Law.—Since the prenatal blood test law became effective in July 1945, 80 per cent of the expectant mothers in the state have received a blood test for syphilis prior to the birth of their children. However, of this number only about 40 per cent were given the test on or before the fifth month of pregnancy, notwithstanding the fact that health authorities have emphasized the importance of having the test made before the fifth month to avoid if possible the hazards of miscarriages, stillbirths or congenital syphilis. Of the 36,071 expectant mothers examined during the fiscal year ended June 30, 674 were found to have syphilis. While 514 were new cases which were placed under treatment, 160 expectant mothers had previous knowledge of the disease. In a recent address Mr. E. J. Hall, educational consultant for the bureau of venereal disease control, state health department, said that "the low percentage of expectant mothers receiving blood tests in the first five months of pregnancy indicates that only a small number of women are receiving proper prenatal care in West Virginia and no doubt partly accounts for the fact that West Virginia's infant mortality rate is 30 per cent higher than the United States as a whole." Mr. Hall reported that 5 per cent of all deliveries in West Virginia are performed by licensed midwives. The act itself makes no provision for blood tests by midwives, but county and district health officers are charged with the duty of obtaining blood specimens for performing serologic tests for syphilis. There is no charge for this service, and examinations are made also without charge at the state hygienic laboratory. The law goes further than this and provides that in areas where there is no county or district health officer the state health department is to assume the responsibility of obtaining specimens without charge to pregnant women.

WISCONSIN

Annual Dearholt Day.—The seventh annual Dearholt Day, presented for the medical students and the general medical profession of Wisconsin by the Wisconsin Anti-Tuberculosis Association, will be held November 18 in Madison and November 19 in Milwaukee. The program will be presented in both cities by Sol R. Rosenthal, Major, M. C., chief of laboratory service, Bruns General Hospital, Santa Fe, N. M., on "BCG in Tuberculosis," and Dr. Julius L. Wilson, associate professor of medicine, Tulane University of Louisiana School of Medicine, New Orleans, on "Cause of Apical Localization of Tuberculosis and Its Implications for Treatment." Dr. Wilson will also speak on "Pulmonary Emphysema: Pathologic Physiology and Treatment." Cooperating in both programs are the Marquette University School of Medicine, Milwaukee; University of Wisconsin Medical School, Madison; Milwaukee Academy of Medicine, Dane County Medical Society and Wisconsin Trudeau Society.

GENERAL

A. A. A. S. Moves Into New Home.—The American Association for the Advancement of Science on September 9 began moving into its new home at 1515 Massachusetts Avenue N.W., Washington 5, D. C. The administrative offices and the editorial office of the *Scientific Monthly* were transferred from the Smithsonian Institution building to the new site, and the editorial office of *Science* and the office of the advertising department were removed from a "temporary building" (constructed in 1917) of the War Department on the campus of the American University several miles distant in the western part of the city.

Aero-Medical Association.—Membership in the Aero-Medical Association of the United States is open to qualified applicants who have some active interest in aviation medicine. This announcement is directed especially to those flight surgeons who are now C. A. A. examiners or who perform flight physical examinations for private individuals or for flight personnel connected with commercial flying. Inquiries may be directed to Dr. Ludwig G. Lederer, medical director, Capital Airlines, Washington National Airport, Washington 1, D. C., who represents civilian interests on the membership committee of the Aero-Medical Association of the United States.

Hermann Muller Awarded Nobel Prize.—Hermann J. Muller, Ph.D., professor of zoology, Indiana University, Bloomington, has been awarded the Nobel Prize in medicine and physiology, it was announced October 31, for his work in discovering that "mutations, or biological changes in species, may be produced by x-rays." Dr. Muller's research throughout his career has been concerned with mutations and evolution. He joined the Indiana University staff in 1945, having resigned as professor of biology at Amherst College. Newspaper reports announce that the Rockefeller Foundation granted $95,000 to Indiana University last year for a six year research program in the field of genetics, and Dr. Muller was named as one of three scientists to conduct it. The American Cancer Society made a grant of $4,500 to Dr. Muller last week for the study of cancer.

Prize in Gastroenterology.—The National Gastroenterological Association announces its annual cash prize award contest for 1947. One hundred dollars and a certificate of merit will be given for the best unpublished contribution on gastroenterology or allied subjects. Certificates will also be awarded those physicians whose contributions are deemed worthy. Contestants residing in the United States must be members of the American Medical Association. Those residing in foreign countries must be members of a similar organization in their own country. The winning contribution will be selected by a board of impartial judges, and the award is to be made at the annual convention banquet of the National Gastroenterological Association in June of 1947. Certificates awarded to other physicians will be mailed to them. All entries for the 1947 prize should be limited to 5,000 words, typewritten in English, prepared in manuscript form, submitted in five copies, accompanied by an entry letter, and must be received not later than April 1, 1947. Entries should be addressed to the National Gastroenterological Association, 1819 Broadway, New York 23.

International Hematology and Rh Conference.—The International Hematology and Rh Conference will be held in Dallas, Texas, November 15-16 under the auspices of Baylor Hospital, Dallas, and in affiliation with the second Mexican Blood Transfusion Congress, which is to be held during the following week. Dr. Joseph M. Hill, Dallas, will preside at the opening session, at which speakers will be Dr. Ignacio Gonzalez Guzman offering greetings from Mexico, Dr. William L. Hart greetings from Dallas and Mr. Lawrence R. Payne a welcome from Baylor Hospital. Other speakers on the program will include:

Dr. Philip Levine, Linden, N. J., Brief Survey of the Significance of the Rh Factor.
Dr. Ernest Witebsky, Buffalo, Interrelationship Between the Rh System and the A B System.
Dr. Guzman, Nuclear Structure of the Blood Cells.
Dr. Robert R. Race, London, England, The Rh Genotypes and Fisher's Theory.
Dr. Hill, Evidence for Rh Antibodies Differing from the Agglutinating Types.
Dr. William Dameshek, Boston, Hemolytic Mechanisms.
Dr. Louis K. Diamond, Boston, Physicochemical and Immunologic Characteristics of Rh Antibodies.
Dr. Israel Davidsohn, Chicago, Rh Antibodies.
Dr. Ludwig Hirszfeld, Wroclow, Poland, The Constitution, Heredity and Terminology of the Subgroups.

There will also be a round table discussion with Dr. Levine presiding. At the banquet Dr. Eduardo Uribe Guerola, Mexico, D. F., Mexico, will be the principal speaker on "The Transfusion Congress."

Educational Program on Diseases of the Heart.—The initiation of a nationwide program of public education and information on diseases of the heart was announced October 4 by the American Heart Association, 1790 Broadway, New York. The object of the campaign is "the dissemination of educational information to the public in a broad effort to retard the rapid increase of heart disease throughout the nation." The program calls for emphasis on educational work with schools, parent-teachers' associations and other groups concerned with children because of the importance of rheumatic fever and heart disease. According to recent surveys, this scourge of children causes more than five times as many deaths as the combined total of deaths from infantile paralysis, scarlet fever, diphtheria, measles, meningitis and whooping cough. It is a serious disease among adults too, as illustrated by the estimated 40,000 veterans who acquired the disease during their recent military service. The educational campaign of the American Heart Association will reach its climax during the National Heart Week to begin on February 9, which includes St. Valentine's day. It is expected that all branches of medicine, pharmacy, insurance, industry and many other groups interested in health and public welfare will cooperate fully. Supporting and cooperating groups will include the following national organizations, which comprise the American Council on Rheumatic Fever of the American Heart Association:

American Academy of Pediatrics.
American Association of Medical Social Workers.
American College of Physicians.
American Hospital Association.
American Medical Association.
American Nurses Association.
American Public Health Association.
American Rheumatism Association.
American School Health Association.
National Organization for Public Health Nursing.
National Society for Crippled Children and Adults.

Special Society Elections.—At the annual meeting of the American Diabetes Association Dr. Russell M. Wilder, Rochester, Minn., was chosen president. Other officers include Drs. Edward S. Dillon, Philadelphia, and Charles H. Best, Toronto, Ont., Canada, vice presidents, Dr. Cecil Striker, Cincinnati, secretary, and Dr. William Muhlberg, Cincinnati, treasurer. The next meeting of the association will be held in Atlantic City in June.——Dr. Robert D. Mussey, Rochester, Minn., was chosen president-elect of the American Association of Obstetricians and Gynecologists in Hot Springs, September 5-7. Dr. Archibald D. Campbell, Montreal, Quebec, was installed as president. Other officers include Dr. Adam P. Leighton, Portland, Maine, vice president, Dr. James R. Bloss, Huntington, W. Va., secretary, reelected, Dr. Leroy A. Calkins, Kansas City, Mo., assistant secretary, and Dr. Ward F. Seeley, Detroit, treasurer. The 1947 meeting will be held at the Homestead, Hot Springs, September 4-6.——At a recent meeting of the Central Association of Obstetricians and Gynecologists Dr. William F. Mengert, Dallas, Texas, was named president-elect, and Dr. Earl C. Sage, Omaha, was installed as president. Other officers include Dr. George Kamperman, Detroit, vice president; Dr. John I. Brewer, Chicago, secretary-treasurer, and Dr. Harold L. Gainey, Kansas City, Mo., assistant secretary. The 1947 meeting of the association will be held in Louisville, Ky., the exact dates to be determined later.——Dr. Frank R. Bradley, St. Louis, was recently elected president of the American College of Hospital Administrators.——At a recent meeting of the American Broncho-Esophagological Association Dr. Robert M. Lukens, Philadelphia, was elected president. Other officers include Dr. Murdock S. Equen, Atlanta, Ga., vice president; Dr. Paul H. Holinger, Chicago, secretary, and Dr. Clyde A. Heatly, Rochester, N. Y., treasurer.

Marriages

Peter Nicholas Horvath, Bethesda, Md., to Miss Irene Kulig of Thorp, Wis., in Forest Glen, Md., August 10.

Daniel Elliott Mack, Windsor, Conn., to Miss Elizabeth Thomas of Mobile, Ala., in Syracuse, N. Y., June 23.

Rodney Robert Gleysteen, Alton, Iowa, to Miss Laura Hannah Funnell in Chula Vista, Calif., September 2.

Virgil Shields LeQuire, Rochester, N. Y., to Miss Louise Fairfax Lasseter of Nashville, Tenn., August 20.

Sidney Ourin Krasnoff, Philadelphia, to Miss Ruth Buchsbaum Bernstein of Elkins Park, June 11.

William Riley Snow, Abilene, Texas, to Mrs. William Emmett Ryan in Amarillo, September 1.

Edward L. Rohlf to Miss Lorene Lindaman, both of Waterloo, Iowa, at Cedar Rapids in August.

Carroll K. Clawson, Grand Rapids, Mich., to Miss Doris Marie Bowman of Kalamazoo, July 2.

Gaston E. Blom, Bronxville, N. Y., to Miss Dorothy Ruth Engstrand of Douglaston, July 20.

Robert Nelson Jr. to Mrs. Frances Franke McNutt, both of Birmingham, Ala., in August.

Louis J. Noun, Des Moines, to Miss Ellen Miles of Alexandria, Va., in Chicago, June 28.

Thomas Kermit Hepler, Harrisburg, Pa., to Dr. Jeanne L. Truter of Danville, June 6.

Edward Olin White, Ehrhardt, S. C., to Miss Ruth Griffin of Charleston, July 12.

Basil B. Dulin to Miss Julia Louise Guess, both of Indianapolis, May 26.

William S. Judy to Mrs. Daisy S. Guy, both of Greenville, S. C., June 8.

Naftula Izbicki to Miss Rose Malekow, both of Chicago, August 11.

Deaths

Clement Buchanan Masson ⊕ New York; George Washington University School of Medicine, Washington, D. C., 1921; born in Newburgh, N. Y., Feb. 2, 1898; assistant professor of clinical neurosurgery at the Columbia University College of Physicians and Surgeons; specialist certified by the American Board of Neurological Surgery; member of the American Psychiatric Association and the Association for Research in Nervous and Mental Disease; fellow of the American College of Surgeons; on the staff of the Neurological Institute of New York; on the staffs of the Grasslands Hospital, Valhalla; consulting neurosurgeon, Vassar Brothers Hospital, Poughkeepsie, Northern Westchester Hospital in Mount Kisco, N. Y., and the Hackensack (N. J.) Hospital; died in the Doctors Hospital, September 5, aged 48.

Herman Grove Difenderfer ⊕ Johnstown, Pa.; Medico-Chirurgical College of Philadelphia, 1911; born in Milton, Pa., Aug. 9, 1886; member of the staffs of the Conemaugh Valley Memorial and Mercy hospitals; served as director of the First National Bank in Beaverdale and as director of the Portage National Bank; medical inspector of the schools in Beaverdale, Wilmore and Summerhill since 1918 and a member of the Summerhill Township school board since 1925; member of the draft board at South Fork during World War I and chairman of Cambria County Selective Service Board number 5, South Fork, during World War II; received a Presidential Citation for his services; died September 5, aged 60, of bronchial asthma.

George Henry Semken ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1896; member of the founders group of the American Board of Surgery; an adviser to the New York Institute of Clinical Oral Pathology; fellow of the New York Academy of Medicine and the American College of Surgeons; member of the New York Surgical Society and the New York Pathological Society; member of the executive committee of the American Cancer Society; consultant, New York City Cancer Institute Hospital; consulting surgeon to the Institute of Cancer Research, Columbia University and the Knickerbocker Hospital, where he died September 16, aged 71.

Dennett L. Richardson ⊕ Providence, R. I.; University of Pennsylvania Department of Medicine, Philadelphia, 1905; member of the House of Delegates of the American Medical Association in 1913; served as president of the Hospital Association of Rhode Island and superintendent of health of Providence; author of "Infectious Diseases and Aseptic Nursing Technique"; formerly superintendent of the Providence City Hospital, which later changed its name to the Charles V. Chapin Hospital, where he was also superintendent; for many years superintendent of the Rhode Island Hospital, where he died September 6, aged 66.

Carl Goodwin Burdick ⊕ Wilton, Conn.; Columbia University College of Physicians and Surgeons, New York, 1903; clinical professor of surgery at the New York University College of Medicine; member of the American Surgical Association; fellow of the American College of Surgeons and the New York Academy of Medicine; past president of the New York Surgical Society; member of the founders group of the American Board of Surgery; served overseas during World War I; on the staffs of the Bellevue Hospital and the Hospital for Special Surgery, both in New York; died September 1, aged 66, of heart disease.

Foster Miller Routh ⊕ Columbia, S. C.; Medical College of the State of South Carolina, Charleston, 1910; served as member, chairman and for many years member of the executive committee of the state board of health; past president of the Columbia Medical Society; served during World War I; at one time associated with the Rockefeller Sanitary Commission and the International Health Board; first health officer of Greenwood County; for many years affiliated with the Columbia Hospital; served as resident physician at the University of South Carolina; died in Varnville September 10, aged 61.

Edward Joseph Agnelly ⊕ Detroit; Detroit College of Medicine, 1903; served during World War I; died September 5, aged 68, of bronchopneumonia.

Jacob S. Allen, Chester, S. C.; Leonard Medical School, Raleigh, 1902; died in Philadelphia September 20, aged 73.

Alton Louis Amsterdam, New York; University and Bellevue Hospital Medical College, New York, 1919; on the staffs of the Mount Sinai Hospital and the Beth Israel Hospital; died October 2, aged 49, of hypertensive cardiovascular disease and coronary occlusion.

Henry Thompson Bailey, Phoenix, Ariz.; Hospital College of Medicine, Louisville, Ky., 1903; fellow of the American College of Surgeons; on the staffs of St. Joseph's Hospital and the Good Samaritan Hospital, where he died September 16, aged 72, of carcinoma of the sigmoid.

Roy Frank Barker, Wood River, Ill.; Barnes Medical College, St. Louis, 1907; member of the American Medical Association; served during World War I; served as St. Clair County physician and coroner; died in Alton September 11, aged 61, of coronary thrombosis.

John Thomas Batte ⊕ Covington, Ky.; Medical College of Ohio, Cincinnati, 1906; found dead in bed September 18, aged 62.

Nathaniel Morrel Benyas ⊕ Honolulu, Hawaii; Northwestern University Medical School, Chicago, 1912; served as vice president of the Hawaii Territorial Medical Association; past president of the Honolulu County Medical Society; served during World War I; died in San Francisco September 7, aged 60.

Charles Willard Burnell, Bridgton, Maine; Baltimore Medical College, 1896; died September 13, aged 84.

John Thomas Carpenter, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1889; member of the American Medical Association and the American Ophthalmological Society; formerly lecturer in ophthalmology at his alma mater and on the staffs of the University Hospital and the Bryn Mawr (Pa.) Hospital; died in Radnor September 16, aged 79.

Benedetto Ciaffo, West New York, N. J.; Regia Università degli Studi di Palermo Facoltà di Medicina e Chirurgia, Italy, 1902; died September 11, aged 73.

Irving Sherburne Cook, Georgiaville, R. I.; Harvard Medical School, Boston, 1886; member of the American Medical Association; for many years health officer; served on the town school committee and as town superintendent of schools; the Irving S. Cook School was named in his honor; died September 9, aged 88, of arteriosclerotic heart disease.

Lyman Driesbach ⊕ Middleburg, N. Y.; New York Homeopathic Medical College and Flower Hospital, New York, 1908; past president of the Schoharie County Medical Society; at various times mayor of Middleburg; died September 3, aged 65.

Ellis Edwin Foster, New Bedford, Mass.; Tufts College Medical School, Boston, 1902; fellow of the American College of Surgeons; died in St. Luke's Hospital September 10, aged 74.

Joshua Francis Fraser, Memphis, Tenn.; Missouri College of Medicine and Science, St. Louis, 1929; member of the American Medical Association; served in France during World War I; died in St. Joseph's Hospital September 17, aged 53.

Ernest Sipe Gasteiger, Los Angeles; Jefferson Medical College of Philadelphia, 1927; member of the American Medical Association; lieutenant commander in the medical corps of the Naval Reserve, not on active duty; on the staff of the California Hospital; died in the Veterans Administration Facility, West Los Angeles, September 14, aged 46.

Jesse Hunnel Hazlett, Waynesburg, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1900; member of the American Medical Association; served during World War I; on the staff of the Greene County Memorial Hospital; died September 14, aged 73, of diabetes mellitus and coronary thrombosis.

Robert Lee Huddleston, Deatsville, Ala.; University of Georgia Medical Department, Augusta, 1890; member of the American Medical Association; formerly senator; died September 17, aged 82.

Harold Carl Joesting, Los Angeles; University of Minnesota Medical School, Minneapolis, 1929; member of the American Academy of Pediatrics; died September 18, aged 42.

Thomas Barnett Lewis Jordan, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1900; for many years medical examiner and company surgeon of the Pennsylvania Railroad; died in Atlantic City, N. J., September 5, aged 72.

Edward N. Kingsbury, Hamden, Conn.; Hahnemann Medical College of Philadelphia, 1880; died October 4, aged 93, of bronchopneumonia.

Charles Augustus Martin, Terry, Miss.; Mississippi Medical College, Meridian, 1910; served during World War I; died August 24, aged 66.

Josiah Libby Millett, Seattle; University of Minnesota College of Medicine and Surgery, Minneapolis, 1902; member of the American Medical Association; died in Edmonds August 27, aged 69.

Robert L. Moberly, Olathe, Kan.; Medico-Chirurgical College of Kansas City, 1900; *member of the American Medical Association;* died May 11, aged 74.

Lawrence Gray Patterson, Memphis, Tenn.; Meharry Medical College, Nashville, 1905; died August 31, aged 67.

Frederick Johnson Peck, Ansonia, Conn.; University of Michigan Homeopathic Medical School, Ann Arbor, 1892; died August 22, aged 79.

Nathan Avery Peyton, Hartsville, Tenn.; Meharry Medical College, Nashville, 1917; served during World War I; died in the George W. Hubbard Hospital of Meharry Medical College, Nashville, August 16, aged 59.

John W. Pickel, Kirkwood, Mo.; College of Physicians and Surgeons, Baltimore, 1884; member of the American Medical Association; honorary member of the Missouri State Medical Association; past president of the Jefferson County Medical Society, of which he had been an honorary member; died September 13, aged 91, of cardiac failure.

William H. Roberts ⚕ Sheridan, Wyo.; Northwestern University Medical School, Chicago, 1901; formerly secretary of the Wyoming State Medical Society; past president of the Sheridan County Medical Society; on the staff of the Sheridan County Memorial Hospital; died July 25, aged 72.

Pleasant W. Rose, Cypress, Ill.; Barnes Medical College, St. Louis, 1899; died August 29, aged 69.

Thomas Andrew Roselle, Palmyra, Mo.; Hospital College of Medicine, Louisville, 1903; member of the American Medical Association; served during World War I; died in the Levering Hospital, Hannibal, September 7, aged 70, of myocarditis.

Alex Morton Rosenblum ⚕ Youngstown, Ohio; University of Pennsylvania School of Medicine, Philadelphia, 1912; served during World War I; served on the staff of St. Elizabeth's Hospital; died September 6, aged 56, of myocardial infarction.

Carl August Samuelson ⚕ Sheldon, Iowa; State University of Iowa College of Medicine, Iowa City, 1923; served during World War I; at one time affiliated with the Hull Hospital in Hull; died in St. Joseph Mercy Hospital, Sioux City, September 15, aged 53, of congestive heart failure following pneumonia.

Harmon Ulysses Sanders ⚕ Carrollton, Miss. (licensed in Mississippi in 1904); *died in Grenada August 16, aged 73.*

Julius A. Schmidt, Milwaukee; Milwaukee Medical College, 1904; member of the American Medical Association; died September 11, aged 70, of carcinoma of the sigmoid.

Rudolph Schwarz, Brooklyn; Medizinische Fakultät der Universität Wien, Vienna, Austria, 1914; served during World War II as medical consultant for one of the Selective Service boards in Bay Ridge and recently received a medal from the government for his five years' service; died in the Montefiore Hospital, New York, August 2, aged 59.

Jesse Evans Shull, Alpena, S. D.; Sioux City College of Medicine, 1898; *member of the board of directors and for many* years president of the Bank of Alpena; died in the Methodist Hospital, Mitchell, July 12, aged 77.

Elwood Shellenberger Snyder, Norristown, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1896; served on the board of health in Lancaster, where he was on the staff of St. Joseph's Hospital; died August 17, aged 78.

Samuel Mott Souders ⚕ Red Lodge, Mont.; Medical College of Ohio, Cincinnati, 1900; died August 29, aged 72.

John W. Speck, Jackson, Mich.; Detroit College of Medicine and Surgery, 1926; member of the American Medical Association; at one time affiliated with the Michigan State Prison Hospital in Jackson; on the staffs of the Mercy Hospital and the W. A. Foote Memorial Hospital, where he died September 8, aged 43, of pulmonary embolism.

Elmer S. Stambaugh, York, Pa.; College of Physicians and Surgeons, Baltimore, 1910; member of the American Medical Association; died July 18, aged 68.

Patricia H. Steen, Hempstead, N. Y.; University of Aberdeen Faculty of Medicine, Scotland, 1921; member of the American Medical Association and the American Psychiatric Association; specialist certified by the American Board of Psychiatry and Neurology, Inc.; consultant, Nassau Hospital, Mineola, where she died September 15, aged 47, of cerebral hemorrhage.

Newton Henry Stein ⚕ Silver Creek, Pa.; Medico-Chirurgical College of Philadelphia, 1904; president of the Silver Creek State Bank; on the staff of the Good Samaritan Hospital, Pottsville; died in the Jefferson Hospital, Philadelphia, August 16, aged 69.

Aubon Earl Stewart, Los Angeles; Manitoba Medical College, Winnipeg, Man., Canada, 1913; member of the American Medical Association; died August 31, aged 59.

Frederick Bismarck Strauss ⚕ Bismarck, N. D.; Rush Medical College, Chicago, 1901; in the Indian Service; died July 26, aged 67.

Joseph Lawn Thompson, Washington, D. C.; George Washington University School of Medicine, Washington, 1912; member of the American Medical Association; served on the faculty of his alma mater and the Georgetown University School of Medicine; formerly on the staff of the Providence Hospital and medical director of the Catholic University; died in the Washington Home for Incurables September 3, aged 72, of cerebral arteriosclerosis.

Walter Elbert Thorpe, Bristol, Conn.; New York Homeopathic Medical College, 1885; died August 20, aged 87.

John Samuel Turberville ⚕ Century, Fla.; Medical College of Alabama, Mobile, 1902; *member of the Southeastern* Surgical Association; fellow of the American College of Surgeons; past president of the Florida Medical Association and the Escambia County Medical Society; medical superintendent of the Turberville Hospital; killed September 21, aged 71, when the automobile in which he was driving collided with a truck near Atmore, Ala.

Donald C. Urie ⚕ Camas, Wash.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1904; affiliated with St. Joseph's Hospital in Vancouver; died July 9, aged 67.

Henry Palmerston Vaughan, Brooklyn; *Columbia University* College of Physicians and Surgeons, New York, 1897; died August 8, aged 81.

William Henry Walker, New York; Georgetown University School of Medicine, Washington, D. C., 1902; served as physician for the New York State Athletic Commission; died August 28, aged 67, of cerebral hemorrhage.

Thomas F. Walsh, Chicago; Chicago Medical School, 1917; died September 14, aged 57.

George Louis Weinstein ⚕ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1905; died July 25, aged 73.

Timothy Daniel Welch, Collins, Miss.; University of Nashville Medical Department, 1905; died in the South Mississippi Infirmary, Hattiesburg, July 21, aged 68.

Daniel J. Williams, Gulfport, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1890; member of the American Medical Association, serving as a member of its House of Delegates in 1904 and 1905; past president of the Mississippi State Medical Association; secretary, Harrison-Stone Counties Medical Society; for many years county health officer; formerly member of the state board of health; director of the Claiborne County Health Department; died September 2, aged 78.

U. S. PUBLIC HEALTH SERVICE

Robert Henry Onstott ⚕ Medical Director, U. S. Public Health Service, San Francisco; born in Colorado Springs, Colo., on Nov. 30, 1905; entered the public health service directly after graduating from the University of Colorado School of Medicine in Denver in 1930; served an internship at the U. S. Marine Hospital; accepted his original commission as assistant surgeon in the regular corps on July 1, 1933; his assignments have included hospital duty, nutrition research, county and state health department work and postgraduate training in public health and venereal disease control at Johns Hopkins University; from September 1940 to March 1942 was detailed as a technical adviser to the governor of Louisiana, aiding in the reorganization of the state health department; until proceeding to Hawaii was assigned as liaison officer to the Fourth Army Command with headquarters in Atlanta; had just returned to this country after three years' service as director of the U. S. Public Health Service District number 10 with headquarters in Honolulu, Hawaii; in that capacity he acted as adviser to the governor of Hawaii and the Territorial Health Department in matters relating to public health administration; killed in an automobile accident near Auburn, Calif., September 4, aged 40, while en route to Washington, D. C., for reassignment as chief of the division of commissioned officers of the U. S. Public Health Service.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct 19, 1946

The Mechanism of Headache

In a paper read at Guy's Hospital and published in its *Gazette*, Sir Charles Symonds pointed out that it is only in the last few years that we have had any clear idea of the mechanisms of headache During operations on the head under local anesthesia we have had the opportunity of observing which structures are sensitive to pain It has been found that all the tissues covering the cranium are pain sensitive, especially the arteries The cranium itself is insensitive, so that after the periosteum has been stripped the skull can be drilled or sawn through without the patient being aware of any sensation except the noise Of the intracranial structures most of the dura mater, all the pia arachnoid and the brain substance are insensitive The parts of the dura which are sensitive are those covering the base of the skull and the tentorium Pressure on the latter causes pain referred to the brow on the same side The falx, on the other hand, appears to be insensitive to pressure Although the dura is insensitive except at the base, the larger arteries are everywhere insensitive Thus crushing the middle meningeal artery causes pain Traction on the walls of the large venous sinuses and their main tributaries also causes pain and so does traction on the large arteries at the base of the brain Stimulation intracranially of the fifth, ninth, tenth and second cervical sensory nerves causes pain of appropriate distribution

Another source of information is the experimental production of headache The intravenous injection of 0 1 mg of histamine causes in most subjects headache after one minute, reaching its maximum half a minute later and passing off in about ten minutes It is of throbbing nature and generalized distribution Within twenty seconds there is flushing of the face with fall of blood pressure lasting less than a minute, so that the headache begins when the blood pressure is returning to normal It is known that histamine also causes dilatation of the arteries of the meninges and on the surface of the brain This in turn leads to increased volume of the intracranial contents and a rise in the cerebrospinal fluid pressure But not until this pressure has almost returned to normal does the headache begin It cannot therefore be due to increased intracranial pressure Further, it is relieved by raising the pressure either by compressing the jugular veins or by intracranial injection of isotonic solution of sodium chloride This suggests that the headache is due to stretching of the arterial walls

It has been shown that the headache of experimentally induced fever also can be temporarily relieved by artificially raising the pressure of the cerebrospinal fluid and that its onset is associated with increased amplitude of pulsation of the intracranial and intraspinal arteries It thus appears that the headache of fever is due to abnormal stretching of the arterial walls Since raising the intracranial pressure by injection of saline solution into the theca will relieve the headache, we may conclude that the arteries chiefly concerned are those within the skull

The headache of migraine is throbbing, like that due to histamine or fever The increased pulsation of the temporal artery on the same side led to observations which showed parallelism with the intensity of the headache Ligation of the temporal artery has produced freedom from pain Thus we are led to conclude that stretching of the arteries is the cause of the pain The headache of arterial hypertension appears to be due to the same cause and the headache of intracranial tumor to traction on or displacement of pain sensitive intracranial structures

BELGIUM

(From Our Regular Correspondent)

Sept 20, 1946

A Children's Hospital as a War Memorial

A Children's Hospital will be erected to perpetuate the memory of the allied soldiers who fell on the soil of Belgium for its liberation A committee has been formed in Brussels under the best auspices with the intention of raising funds for the construction of the memorial Rather than a monument of exclusively decorative nature, the committee has in mind an enduring and living monument dedicated to relieve the suffering of unfortunate children No institution in our country is prepared to admit children with chronic diseases or convalescents from acute diseases The institution which has been planned will be situated in Ostende facing the ocean On each of the stones of the edifice will be engraved the name of a soldier who died in Belgium The various pavilions will bear the names of army divisions that distinguished themselves in Belgium by deeds of valor

Centennial of Van Beneden

The centennial of Edouard Van Beneden was celebrated at the University of Liege Among those present were his children and other relatives, the civil authorities, delegations of the Royal Academy of Belgium the Royal Academy of Medicine, the staff of professors, numerous guests and students Van Beneden is memorialized especially for the creation of laboratories for everyday work and for research He and his brother in law, Van Pair, then professor of pathologic anatomy, purchased with their own money the microscopes It was only little by little that the government stepped in and extended the sphere of the laboratories to other faculties

Professor Winiwater recalled the brilliant scientific career of Van Beneden, particularly his work on embryology, in which he demonstrated that each mature sex cell encloses only half the number of chromosomes typical of the species The researches of Van Beneden justify classing him with the great biologists of all times and all countries

Tuberculosis Control

The efforts which private organizations devoted to the campaign against tuberculosis for nearly thirty years were coordinated in 1929 when the Belgian National Organization for Defense Against Tuberculosis was founded The executive committee, presided over by Dr Derscheid, meets every month to assure contact between the different sections of the national organization, to discuss projects, establish liaison with the government, make assignments and arrange the budget subsidies, and so on The three organizations, formerly independent, became sections of the national organization each intended for a special activity (1) general prophylaxis, (2) preservation of childhood and (3) treatment and cure

The essential aim of the league is to fight tuberculosis by means of the dispensary the program of which includes diagnosis, detection domiciliary prophylaxis and social assistance, 130 dispensaries with 225 physicians and 254 visiting nurses belong to it or are affiliated with it The preventoriums, because of their essentially prophylactic role, are connected with the league

In the preservation of childhood against tuberculosis the program is to raise and protect against infection the offspring of parents whose tuberculosis is contagious Its methods vary, since its care extends to children from birth to 14 years Its program being of a prophylactic nature, is closely allied to that of the League Against Tuberculosis

The section on treatment and cure devotes its efforts to the treatment and prophylactic isolation of patients suffering from the different forms of tuberculosis Thiry two sanatoriums belong to it or are affiliated with it They are situated in the country, on the coast, and even in foreign countries. Certain of these establishments have a social service for work outside the sanatorium, in the homes of the patients.

There are attached to the national organization a technical service competent to construct buildings suitable to the program, a publicity service on prophylaxsis, a service of publicity to stimulate the public to contribute funds to combat tuberculosis, a general accounting service and a medical library.

The organization of the national body is not as rigid as one might believe on the basis of this classification. Its different sections often combine their efforts. It is precisely in the role of coordinator that the national organization plays its most important part.

Medical Reserve Officers

A National Union of Medical Reserve Officers has been created under the presidency of Professor Debaisieux, who, in thanking his colleagues for responding to the appeal, emphasized that the new association ought to contribute to the organization of a superior health service. One of the principal aims of the association will be the creation of an atmosphere which will permit the health service of the army to function without friction. It is hoped that there will be close collaboration between military and civilian physicians, and it is desired that the faculties of medicine will collaborate in the instruction of the army health service.

BRAZIL

(From Our Regular Correspondent)

Rio de Janeiro, Sept. 17, 1946.

The Inter-American Congress of Medicine

In the presence of President Eurico G. Dutra, the first Inter-American Congress of Medicine, organized by the National Academy of Medicine, was inaugurated on September 7, the Brazilian Independence Day. Dr. Ernesto S. Campos, minister of health and professor at the University of São Paulo, presided at the opening session, addressing the several hundred physicians present as delegates from the American republics, to welcome them in the name of the Brazilian government. Dr. Campos reviewed the brilliant history of the old Imperial Academy of Medicine, founded one hundred and six years ago under the patronage of Pedro II, the second and last emperor of Brazil. It is the same academy which called the lively meeting closed two days ago, destined to mark a milestone in the future history of cooperation among the physicians of our continent. The second speaker of the inaugural evening was Dr. Antonio Austregesilo, professor emeritus at the University of Rio de Janeiro and president of the academy, who thanked the delegates for accepting the invitation of the Brazilian physicians to initiate this series of inter-American meetings of practitioners of all the specialties of medicine. In his address Dr. Austregesilo outlined the biographies of some great Brazilian physicians of the past—Alvarenga, Silva Lima, Torres Homem, Saboia, Rocha Faria, Francisco de Castro, Fajardo, Sodré, Oswaldo Cruz, Miguel Couto and Chagas. He emphasized the contributions of the physicians of the Americas, declaring that the Brazilian practitioners had invited their colleagues in order to have the opportunity of discussing the most pressing medical subjects and to acquire the knowledge they can bring and thus benefit from the professional interchange of the sister republics. After Dr. Austregesilo's speech, the heads of the foreign delegations addressed the congress, stressing the same spirit of brotherhood. Sir Alexander Fleming, a special guest of the Brazilian government, was chosen by the academy as honorary president of the congress. The meeting brought together such other leading figures of the medical profession of the Americas as Malcolm T. MacEachern of Chicago, Col. Charles O. Bruce of the Headquarters Army Ground Forces, Washington, D. C., James A. Shannon representing the U. S. Public Health Service, Roland Klemme of St. Louis, representing the American College of Surgeons, Tracy Putnam, Ardzroony Packchanian of the University of Texas, Howard E. Snyder of Winfield, Kan., George R. Cowgill of New Haven, Conn., George Hoskins of Boston, George Baehr of New York, David Speroni, professor emeritus at the University of Buenos Aires, Gregorio Alfaro, president of the Argentine Academy of Medicine, Nicolas Romano and Mariano Castex of the University of Buenos Aires, Cecilio Romaña of the University of Tucuman, Argentina, Salvador Mazza of the Argentine Mission of Studies of Regional Diseases, Francisco Forteza, minister of health of Uruguay, Juan C. Plá and Rodolfo Tallice of the University of Montevideo, Uruguay, and Francisco Garcia of Lima, Peru.

The congress was divided into twelve sections, which, with their respective chairmen, were concerned with hospital organization and administration (Ernesto S. Campos), medical and racial problems of immigration to the Americas (Antonio Austregesilo), war medicine and surgery (Col. E. Marques Porto), prevention and treatment of cancer (A. F. Costa Jr.), endemic diseases of the Americas (H. C. Souza Araujo), nutrition and vitaminology (Waldemar Berardinelli), endocrinology (Luis Capriglioni), treatment and prevention of tuberculosis (Affonso MacDowell), neuropsychiatry (Deolindo Couto), hygiene and public health (J. Barros Barreto), clinical medicine (Henrique Roxo) and clinical surgery (Alfredo Monteiro). Some of the subjects presented and discussed were organization and administration of American hospitals (Dr. MacEachern), conveniences and inconveniences of immigration to the countries of the Western Hemisphere (Dr. David Speroni, Argentina), cross breeding is favorable to Brazilians (Dr. Arthur Ramos, Brazil), military-medical importance of infectious hepatitis (Dr. Bruce), limitations of penicillin therapy (Sir Alexander Fleming), use of convalescent serums in the Argentine army (Dr. R. Bejarano), early diagnosis of neoplasms of the prostate (Dr. George T. Pack, New York), nonosteogenic bone tumors (Dr. Amadeu Fialho, Brazil), present state of the campaign against cancer in Rio de Janeiro (Dr. Costa), bronchial cancer and emphysema (Dr. Castex), possible existence of human cases of American trypanosomiasis in the United States (Dr. Packchanian), the problem of leprosy in the state of São Paulo (Dr. Nelson S. Campos, Brazil), leprolin, a new therapeutic agent against leprosy (Dr. Souza Araujo), the soya bean in the diet (Dr. Afranio do Amaral, Brazil), thyrotoxicosis (Dr. Hoskins), statistical results of the treatment of thyrotoxicosis (Dr. Plá), some important aspects of nutrition (Dr. Cowgill), clinical epidemiologic and social significance of primary infection and reinfection in tuberculosis (Dr. Fernando Gomez, Uruguay), collective and individual diagnosis of pulmonary tuberculosis (Dr. M. de Abreu, Brazil), mortality from tuberculosis in Brazil (Dr. R. Paula Souza, Brazil), subclinic forms of pulmonary tuberculosis (Dr. Estevam Somogyi, Bolivia), treatment of facial neuralgia (Dr. Klemme), modern aspects of psychosomatic medicine (Drs. Mauricio de Medeiros and Flavio de Souza, Brazil), the encephalorachial fluid in cerebral abscesses (Drs. Plá, Schiaffino and Morquio, Uruguay), professional training for the practice of psychosomatic medicine (Dr. J. Leme Lopes, Brazil), penicillin therapy of neurosyphilis (Sir Alexander Fleming), encephalomyelodysplasia (Dr. Austregesilo), sanitary indexes of Uruguay (Dr. R. Cappeletti), inter-American cooperation in the campaign against venereal diseases in the Western Hemisphere (Dr. L. Campos Mello, Brazil), the campaign against tuberculosis with limited financial resources (Dr. Barros Barreto), BCG immunization in tuberculosis control (Dr. G. Sayago, Argentina) and aseptic gastrointestinal surgery (Drs. Jorge Grey, Brazil, and Abilio Reis, Oakland, Calif.).

Correspondence

PSYCHIATRY IN WORLD WAR II

To the Editor:—I believe that all medical officers who served in both World War I and World War II will agree that the percentage of psychiatric cases developing in the second war was far greater than the percentage developing in the first. This at first glance is rather surprising, especially in view of the fact that during World War II *all* inductees had psychiatric examinations the purpose of which was to weed out the prepsychiatric cases. This was not true in World War I.

What then is the reason for the seeming deterioration of our citizen soldiery between the two wars? Certainly there could not have been any fundamental change in the psychosomatic makeup of our people in a generation. I venture to suggest the following reasons for the increase in psychiatric cases (exclusive of definitely psychotic cases) in World War II over World War I:

1. Too much public emphasis on psychiatric conditions.
2. A change in our political philosophy.

So much has been written in both the lay and the medical press about psychoneurosis, neurasthenia and psychiatric conditions in general that it has set every one to thinking about these conditions and undoubtedly many men have tried to use them as a means of escaping service. Induction board examinations revealed the fact that many men deliberately answered questions during their psychiatric examinations with a view to being rejected. They took their cues from other men previously rejected for psychiatric reasons. In combat and in theater of operations hospitals there were also obvious cases of attempts to secure evacuation by feigning psychiatric conditions, the knowledge of how to make the attempts being based on experiences gained from other cases which had been similarly evacuated. All of which would seem to indicate that the role of psychiatry in war has been played up too much in the newspapers and other places. Possibly medical men have talked too much about it in public utterances. The question arises as to whether we would not have been better off if the psychiatric examinations and the consequent stress on psychiatric conditions had been eliminated. In the case of inductees, if, as would seem on the surface, there was a smaller percentage of psychiatric cases during World War I than during World War II, would we not have been better off during the latter conflict simply to have eliminated the definitely psychotic cases? I am not prepared to say that we would have been, but certainly the results with methods used during World War II were far from satisfactory, and a consideration of their revamping is highly in order.

I believe that a change in our political philosophy has affected the patriotism and sense of duty of a great mass of our citizens. The great bulk of the youth who fought World War II reached maturity during an unusual period in our history. They grew up during a depression period when the government was handing out favors of all sorts to great masses of citizens. They had been accustomed to accepting something from their government. This was something entirely new in American history. Previously the soundest thought of the best citizens led them to believe that the citizen owed something to his country, and not the country to the individual. During World War II we found many "psychiatric" patients feeling, and openly declaring, after having been through one "island" campaign that they had "done their share." Certainly too many of our citizens did not properly feel their obligation to their country. (I am not referring to the congenital no-goods who do not have the fundamental basic stuff ever to feel the proper obligation to anything—family, friend or, least of all, country.) My experience with the rank and file of our soldiers leads me to believe that there is nothing wrong with them basically any more than there has ever been. I do believe, however, that a changing political philosophy has had its effect in producing epidemics of "psychoneurosis."

This communication is not written as a criticism of any one but simply to stimulate further thought on one of the most important medical problems that developed during the war. I think it is obvious to every one that we have not yet the answer. All psychiatrists with whom I have talked agree that this is true. They have worked hard and done their best, but psychiatry is a young subject. The specialty will undoubtedly benefit from the experiences of the war. Never before has it been put to such a great test on such a vast scale. It will probably take years of statistical study to evaluate the successes and the failures. In the meantime, one wonders whether we should continue our present method of induction examinations. Would it not be better to drop the psychiatric induction examination entirely, except for the elimination of the definitely psychotic cases by a careful study of the institutional records of the prospective inductees? Possibly a common sense evaluation of the men made by internists would be more satisfactory than the present psychiatric examination. A great deal of the problem is palpably that of internists. Should they not shoulder the major responsibility and call in skilled psychiatrists only in doubtful cases? This would eliminate part of the present trouble, namely that of spreading the skilled psychiatrists so thin as to make them virtually ineffective. I am not proposing this in any way except to provoke discussion. Who knows the answer? No one concerned should be interested in any solution but the one that would bring the greatest good to the country as a whole. Possibly psychiatry is still too young for the great task that has been placed upon it. Possibly not. Certainly the records so far call for at least a new tactical alinement.

AMOS R. KOONTZ, M.D., Baltimore.

TUBERCULOSIS

To the Editor:—In a communication to THE JOURNAL, September 28, Dr. Röder stated that in 1920 he had set forth the same views on apical predilection in adult tuberculosis that had been discussed as a new theory in an editorial in THE JOURNAL of July 13.

A comparison of his paper (*Wien. klin. Wchnschr.* **33**:646 [July 15] 1920) with that published by me (*Am. Rev. Tuberc.* **58**:297 [April] 1946) and discussed in the editorial shows that the two theories have nothing in common. On the basis of data only recently established and obtained by those who catheterized the right ventricle and pulmonic artery, it could be pointed out that arterial flow must cease in the apical zone when adults are sitting or standing quietly. I suggested that this permitted accumulation of toxins and prevented normal quantities of phagocytes and antibodies reaching the apical zones. Dr. Röder, on the basis of rather questionable data, chiefly from plant physiology, concluded that "the function of cells is proportional to the hydrostatic pressure" on them, that "with the constitutionally low pressure in the pulmonary capillaries a decrease in vitality must be encountered" and that "the important factor in predisposition is a low capillary pressure." No reference to any of these points was made in my paper, and Dr. Röder made no reference to blood flow, lymph flow, antibodies or phagocytes—the factors with which my paper was concerned. Both papers referred to facts in pathology and physiology which had been common knowledge since the late nineteenth century, but they drew entirely different conclusions from these facts.

The theory Dr. Röder offered had never been accepted, and for obvious reasons. A 4 per cent difference in absolute pressure on the cells is the maximal possible in the pulmonary capillaries—760 mm. of mercury at the apex and 760 mm. of mercury plus 30 mm. of mercury, the equivalent of 40 cm. of blood, at the base. If a lowering of the pressure by 4 per cent caused apical cells to be susceptible while those at the base were resistant, a change in altitude of 5,000 feet would make the entire lung far more susceptible than the apex at sea level. Yet the value of high altitude is generally conceded by those who treat tuberculosis.

Dr. Röder's "hydrostatic pressure on the cell theory" is not the same as that recently advanced to account for apical susceptibility. The recent theory is unproved, but it would be unfortunate to have it confused with older and discarded theories.

William Dock, M.D., New York.
Professor of Medicine, Long Island College of Medicine.

RADIUM POISONING

To the Editor:—In view of the devastating influence the atomic bomb might have on our civilization, I think the public should become acquainted with a study on radium poisoning which was made possible through financial aid from the American Medical Association. This was entitled "Experimental Radium Poisoning," by Maurice Rosenthal, M.D., and Edwin J. Grace, M.D., and dealt with bone marrow and lymph node changes in rabbits produced by oral administration of radium sulfate. It appeared in the *American Journal of the Medical Sciences* (**191**:607 [May] 1936).

Subsequent to the publication of this article there was an exhibit at the next annual session of the American Medical Association, dealing with the subject matter.

A therapeutic theory was held that it might be possible to produce, in an animal, deadly tissue damage from radioactive substance and then reverse this process and restore the animal to a healthy state. Ample evidence that this is impossible was given in the aforementioned article, which showed that the process is absolutely irreversible and that death invariably follows.

At the time this study was made, it was a very urgent clinical problem. One of the authors of this paper (E. J. G.) was interested in the approaching deaths of some patients suffering from radium poisoning, and at that time we were helpless to alter in any way this deadly phenomenon. It is well worth noting that now, ten years later, in spite of the great advances in medicine, especially in the field of antibiotics, nothing can be done to remove radioactive substances from body tissues.

The magnitude of the responsibility of the statesmen entrusted with the problems surrounding the atomic bomb demands very serious consideration of these clearly proved facts, and a plan of education should be instituted immediately to awaken the public to full realization that they cannot view indifferently this colossal missile of destruction.

Edwin J. Grace, M.D., Brooklyn.

PRIORITY FOR HYPERVENTILATION TEST

To the Editor:—In directing attention to the value of the hyperventilation test in my discussion of Lennox's article on Tridione in the Dec. 15, 1945 issue of The Journal, page 1074, it was my intention to establish Rosett's priority for having mentioned this test in 1918. The word Brain's should read Rosett's: the reference is *Brain* (**47**:293 [Aug.] 1924). I also directed attention to the previous use of caffeine in the treatment of petit mal seizures by Karger and others.

M. G. Peterman, M.D., Milwaukee.

BRITISH NATIONAL HEALTH INSURANCE

To the Editor:—It was with the greatest astonishment that I read in Dr. Edward Ochsner's evidence to the United States Senate Committee on Education and Labor (The Journal, August 3, p. 1150) his preposterous illustration of the methods of British National Health Insurance practice. He said "A prominent Chicago physician shortly before World War II visited a panel physician in England and went with him to see how he handled the waiting patient problem. As the doctors stepped into the waiting room the English physician said to the more than 40 patients seated there 'Will those of you who are troubled with headache please stand,' and 6 stood up. He then reached into his desk and took out six identical prescriptions and handed one to each of the 6 standing patients and dismissed them."

This is not the first time I have had occasion to protest against the misleading and inaccurate accounts given, evidently at second hand, by certain American doctors who are endeavoring to avert the introduction of any health insurance scheme into their own country by denouncing the British scheme. In the present instance Dr. Ochsner appears to have accepted as fact a story that must surely have passed round as a joke, and it is most deplorable that he should have repeated it in public as responsible evidence to a Senate committee. It is gross libel.

I can assure American readers that such methods are never adopted by British insurance practitioners and would indeed never be tolerated by patients or insurance committees. I challenge Dr. Ochsner to bring forward evidence to substantiate his allegations. If he cannot do so, I hope he will retract his statement, which has caused much distress to his British colleagues.

Charles Hill, Secretary,
British Medical Association.

[This letter was referred to Dr. Edward H. Ochsner, who replies:]

To the Editor:—I wish to say that the statement which I quoted before the Senate Committee on Education and Labor and which is criticized by the secretary of the British Medical Association was actually made by a then prominent Chicago physician.

Edward H. Ochsner, M.D., Chicago.

DISTRIBUTION OF MOSQUITOES

To the Editor:—I suppose you have already received some communications regarding the paragraph on page 236 of The Journal, issue of September 28. In this paragraph it is stated that "there are no Anopheles mosquitoes in Ceylon, but there are Culex and Aedes mosquitoes." This, of couse, is entirely untrue as regards Anopheles, since Ceylon has a very rich anopheline fauna, described in a number of excellent monographs (H. F. Carter and others). It is now well established that malaria in Ceylon is transmitted chiefly by Anopheles culicifacies.

Paul F. Russell, M.D., New York.

To the Editor:—On page 236 of The Journal, September 28, is a statement to the effect that there are no Anopheles mosquitoes in Ceylon.

A casual perusal of Fauna of British India, Diptera, volume IV Anophelini, by Christophers, reveals twenty-six species of Anopheles in Ceylon. There probably are more known by this time, because Christophers' book was published in 1933.

C. F. Adams, M.D., Jefferson City, Mo.
Director, Bureau of Laboratories, State
Division of Health of Missouri.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Physician's Liability to Child for Injuries During Childbirth.—The plaintiff, an infant, by her father sued for injuries alleged to have resulted from the malpractice of the defendant physicians at the time of her birth. The case was heard on defendants' motion for summary judgment in the district court of the United States for the District of Columbia.

The question raised by the motion, said the court, is "whether an infant through its father and next friend has a right of action springing from the alleged fact that it was taken from its mother's womb through professional malpractice, with resultant consequences of a detrimental character." This is a novel question in this jurisdiction, the court continued, and judicial opinion, in those jurisdictions where it has been met, has held that at common law, in the absence of statute, prenatal injury affords no basis for an action in tort, in favor either of the child or of its personal representative. This conclusion is predicated, it appears, on the assumption that a child en ventre sa mere has no juridical existence and is so intimately united with its mother as to be a "part" of her and as a consequence is not to be regarded as a separate, distinct and individual entity. This doctrine was announced by Mr. Justice Holmes in the case of *Dietrich v. Inhabitants of Northamption,* 138 Mass. 14 (1884), which apparently has been relied on as dispositive and controlling ever since, except in those few cases in which recovery was barred on the theory of no contract and therefore no duty. In this opinion Justice Holmes said:

> Taking all the foregoing considerations into account, and further, that, as the unborn child was a part of the mother at the time of the injury, any damage to it which was not too remote to be recovered for at all was recoverable by her. . . .

Here, however, the court pointed out, we have a viable child —one capable of living outside the womb—and which has demonstrated its capacity to survive by surviving—are we to say now it has no locus standi in court or elsewhere? From the point of view of the civil law and the law of property, a child en ventre sa mere is regarded as a human being from the moment of conception—which it is in fact. Why a "part" of the mother under the law of negligence and a separate entity and person under the law of property and crime? Why a human being under the civil law and a nonentity under the common law? It has, if viable, its own bodily form and members, manifests all the anatomic characteristics of individuality, possesses its own circulatory, vascular and excretory systems and is capable now of being ushered into the visible world. In a Canadian case in which a woman seven months pregnant was descending from a tram, when, as the result of the negligence of the operator, she was thrown to the street and two months later gave birth to a child with club feet (*Montreal Tramways* v. *Leveille,* 1933, 4 Dom. L. R. 337) the court said:

> If a child after birth has no right of action for prenatal injuries, we have a wrong inflicted for which there is no remedy, for, although the father may be entitled to compensation for the loss he has incurred and the mother for what she has suffered, yet there is a residuum of injury for which compensation cannot be had save at the suit of the child. If a right of action be denied to the child it will be compelled, without any fault on its part, to go through life carrying the seal of another's fault and bearing a very heavy burden of infirmity and inconvenience without any compensation therefor. To my mind it is but natural justice that a child, if born alive and viable should be allowed to maintain an action in the courts for injuries wrongfully committed upon its person while in the womb of its mother.

The logic of this position, said the district court, is unassailable. The absence of precedent should afford no refuge to those who by their wrongful act, if such be proved, have invaded the right of an individual—employed as the defendants were in this case—to attend, in their professional capacities, both the mother and the child. And what right is more inherent, and more sacrosanct, than that of the individual in his possession and enjoyment of his life, his limbs and his body? That a right of action in cases of this character would lead to others brought in bad faith and might present insuperable difficulties of proof—a premise with which I do not agree—is no argument. The law is presumed to keep pace with the sciences and medical science certainly has made progress since 1884. The defendants' motion for summary judgment was therefore denied.—*Bonbrest v. Kotz, 65 F. Supp. 138 (Dist. of Col., 1946).*

Medical Motion Pictures

FILM REVIEW

Continuous Spinal Analgesia in Caesarean Section. By John C. Ullery, M.D., Philadelphia, with the aid of Norris W. Vaux, M.D., Clifford B. Lull, M.D., and Robert A. Hingson M.D., Surgeon, U. S. P. H. S. 16 mm. Color, silent, 1,008 feet (3 reels), showing time forty-two minutes. Produced in 19[illegible] at the Philadelphia Lying-In Hospital By Mervin W. La Rue. Procurable from Abbott Laboratories, North Chicago, Ill.

This film illustrates clearly the proper technic of continuous spinal analgesia in clinical cesarean section. The reactions of the average patient undergoing this procedure are also well illustrated. The photography is excellent. A few animal experiments are included showing the value of continuous spinal analgesia over the single injection technic. These would be of more value if captions were included explaining these views more clearly.

That the use of small divided doses of drugs for spinal analgesia is far superior to the single large injection technic is a well established fact. This film properly illustrates the value of this technic for cesarean section in the good risk patient. The choice of any spinal analgesia technic for cesarean section depends entirely on the condition of the patient, and this fact should be stressed by additional captions explaining the need for the adequate employment of fluids, plasma or blood to correct dehydration, exhaustion or shock from hemorrhage before any spinal analgesia can be attempted. Other definite contraindications to any spinal analgesia should also be stated. The value of oxygen administration during spinal analgesia, particularly when intercostal activity is decreased in addition to the decreased vital capacity of the woman at term, should be included. The blood pressure, pulse, respiration and general reaction of any patient under spinal analgesia need as careful watching as under any inhalation or intravenous anesthesia.

This film is of definite value in teaching students, anesthesiology residents and obstetricians the proper technic for continuous spinal analgesia for cesarean section. Additions to the text, as suggested, would increase the safety of this procedure.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in The Journal, Nov. 2, page 536.

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Part II.* Dec. 16-17. *Part III.* Boston, Nov. 19-21. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology: *Oral.* Los Angeles, 2d week in April. Sec., Dr. P. M. Wood, 745 Fifth Ave., New York.

American Board of Dermatology & Syphilology: *Oral.* Cleveland, Dec. 5-7. Sec., Dr. George M. Lewis, 66 E. 66th St., New York 21.

American Board of Neurological Surgery. Applications for examination will be accepted until Feb. 15. Sec., Dr. P. C. Bucy, 912 S. Wood St., Chicago.

American Board of Ophthalmology: *Oral. All Groups. Parts I and II.* New York, June 1947. Final date for filing application is Dec. 1. Chicago, October 1947. Final date for filing application is March 1. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Me.

American Board of Pediatrics: Pittsburgh, Nov. 10-12, Boston, Dec. 13-15. Sec, Dr. Lee F. Hill, 3309 Forest Ave, Des Moines.

American Board of Urology: *Oral.* Chicago, February 1947. Final date for filing application is Nov. 15. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis 4.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage *(6 cents if one and 18 cents if three periodicals are requested).* Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

72:1-136 (July) 1946

War Comes to Pediatrics: Presidential Address. C. A. Aldrich.—p. 1.
Resistance of Cotton Rats to Virus of Poliomyelitis as Affected by Intake of Certain Purified Vitamins and by Sex. H. M. Weaver, with technical assistance of Rose Fucinari and Nina Kehrer.—p. 6.
Celiac Syndrome: IV. Chemotherapy in Infections of Respiratory Tract Associated with Cystic Fibrosis of Pancreas; Observations with Penicillin and Drugs of Sulfonamide Group, with Special Reference to Penicillin Aerosol. P. E. A. di Sant'Agnese and Dorothy H. Andersen.—p. 17.
*Id.: V. Genetics of Cystic Fibrosis of Pancreas with Consideration of Etiology. Dorothy H. Andersen and R. G. Hodges.—p. 62.
Congenital Duodenal Obstruction: Roentgen Diagnosis by Insufflation of Air. H. Z. Mellins and Doris H. Milman.—p. 81.
Role of Psychiatry in Children's Hospital Service: Account of Experiment in Integrating Psychiatry and Pediatrics in Inpatient Service. M. J. E. Senn.—p. 95.

Celiac Syndrome: Genetics of Cystic Fibrosis of Pancreas.—Cystic fibrosis of the pancreas was found to occur among siblings, twins and more distant relatives with a distribution which is compatible with the hypothesis that it is carried as a relatively infrequent hereditary trait. This conclusion was based on 48 cases in which the history of the sibling was known and on family pedigrees in 20 of these cases and also on 56 cases in the literature in which information as to siblings is given. Although the incidence among siblings approximates the 25 per cent expected of a mendelian recessive trait, the distribution of the cases in families suggests that the disease, although hereditary, requires more than one factor for its expression. This hypothetical factor is as yet unknown. The lesion in the pancreas is not a malformation in the true sense of the word but appears in the latter part of pregnancy. It probably results from an abnormality of the acinar secretion. A comparable disturbance is also found in the liver, the gallbladder and the intestine and possibly in other glands. The congenital intestinal obstruction often associated with pancreatic fibrosis is probably the result of failure of pancreatic function, with secondary changes in the meconium, often complicated by volvulus or congenital peritoneal adhesions. The latter two conditions frequently tend to distract attention from the meconium ileus. There is evidence that the pulmonary lesion begins after birth and is primarily the result of nutritional deficiency.

American Journal of Hygiene, Baltimore

44:1-182 (July) 1946. **Partial Index**

Q Fever in the Mediterranean Area: Report of Its Recurrence in Allied Troops. *F. C. Robbins and C. A. Ragan.—p. 6.*
Epidemics of Q Fever Among Troops Returning from Italy in the Spring of 1945. M. Feinstein, R. Yesner and J. L. Marks.—p. 72.
*Identification and Characteristics of the Balkan Grip Strain of Rickettsia Burneti. Commission on Acute Respiratory Diseases, Fort Bragg, North Carolina. J. H. Dingle and others.—p. 110.
Laboratory Outbreak of Q Fever Caused by Balkan Grip Strain of Rickettsia Burneti. Commission on Acute Respiratory Diseases, Fort Bragg, North Carolina. J. H. Dingle and others.—p. 123.
*Identification of Q Fever in Panama. G. Cheney and W. A. Geib.—p. 158.
*Q Fever: Immunologic Comparison of Strains. N. H. Topping, C. C. Shepard and R. J. Huebner.—p. 173.

Agent of Balkan Grip a Strain of Rickettsia Burneti.—In May 1945 the Commission on Acute Respiratory Diseases received specimens of guinea pig blood containing a fever inducing agent from Caminopetros of the Institut Pasteur Hellenique. Caminopetros had isolated the agent by inoculating guinea pigs with the blood of a patient during an outbreak of respiratory disease in Athens. He had maintained it for about thirteen months by serial passages in guinea pigs. The only response of the animals to inoculation was fever. Blood taken from the animals during the febrile period contained the agent. The guinea pigs were susceptible to infection by the intramuscular, intracranial and intranasal routes and by direct injection into the lung. The observations of Caminopetros were confirmed by the commission. It was found that the agent grew well in embryonated hen's eggs, that it could be visualized as minute pleomorphic rods and that intracellular inclusions consisting of masses of the organisms occurred in the organs of the infected mice. Its pathogenicity for human beings was demonstrated by the development of 16 cases of laboratory infection. Confirmation of its identity as a strain of Rickettsia burneti was accomplished by means of serologic tests. Agglutination tests with *an antigen prepared from the Balkan grip strain of R. burneti* were used in studies of serums from outbreaks of Q fever and proved to be of value for the serologic diagnosis of the disease.

Immunologic Comparison of Strains of Q Fever.—Several strains of Q fever recently isolated from human cases of pneumonitis have been compared by Topping and his associates with one another and with known strains. The 6 strains used in these investigations were an Australian, an American, the Balkan grip agent, an agent isolated from the Fort Bragg laboratory outbreak, the Panama and the Henzerling strain isolated in Italy. It was found that complete reciprocal cross immunity occurs in guinea pigs. The immunologic relationships were studied by complement fixation and agglutinin absorption tests. These tests indicate similarity in immunologic specificity, although there were wide variations in the sensitivity of the antigens.

American Journal of Medical Sciences, Philadelphia

212:1-128 (July) 1946

Spermatogenic Activity of Δ^5-Pregnenolone and of Its Esters. G. Masson.—p. 1.
Testosterone in Angina Pectoris. E. B. Levine and A. L. Sellers.—p. 7.
Echinococcosis in Iceland. N. Dungal.—p. 12.
Traumatic Streptococcic Meningitis: Report of Case, with Recovery, and Review of Literature. M. Berk.—p. 18.
*Pneumonitis Occurring in Rheumatic Fever. G. C. Griffith, A. W. Phillips and C. Asher.—p. 22.
Selection of Patients with Arterial Hypertension for Treatment by Repeated Injections of Pitressin. J. Q. Griffith Jr., N. Padis and E. Anthony.—p. 31.
Reactions of Intravenously Administered Amino Acids (Casein Hydrolysates). H. H. Hecht.—p. 35.
Malarial Jaundice. A. G. Hills.—p. 45.
Purpura as Complication of Malaria. J. Shrager and B. H. Kean.—p. 54.
Blood Protein Tyrosine Reaction in Malaria, Acute Epidemic Hepatitis and Certain Other Diseases. W. B. Wartman and N. Shlimovitz.—p. 60.
Urinary Excretion of Methionine in Liver Disorder. F. Homburger.—p. 68.
Use of Molybdenized Ferrous Sulfate in Treatment of True Iron Deficiency Anemia of Pregnancy. E. R. Neary.—p. 76.
Effect of Methylxanthines on Prothrombin Time and Coagulation of Blood. D. Scherf and M. Schlachman.—p. 83.
Blood Levels of Penicillin After Various Forms of Oral Administration. L. D. Seager, W. G. Shoemaker and G. Wells.—p. 90.
Infectious Hepatitis. W. A. Sodeman.—p. 94.
Schizophrenia. A. J. Lubin.—p. 107.

Pneumonitis in Rheumatic Fever.—Griffith and his associates define pneumonitis as a manifestation of rheumatic fever characterized by an inflammatory process of lung and pleura, *with an insidious onset, migrating consolidation and frequent* pleurisy with or without effusion. They observed pneumonitis in 119 of 1,046 rheumatic fever patients at a naval hospital. The pneumonitis is of three types according to its time of appearance in the rheumatic fever state: primary acute, secondary acute and subclinical. The diagnosis of pneumonitis of rheumatic origin is based entirely on the exclusion of the other types of pneumonia and the concomitant development of other manifestations of acute rheumatic fever. The laboratory aids are of little help in establishing the diagnosis. The rapid shift of areas of density in the roentgenogram, the rapid development of an effusion and the close adherence of the density to the bronchovascular markings are helpful in differentiating this condition. Pneumonitis is a serious manifestation of rheumatic fever activity.

American Journal of Medicine, New York

1:105-212 (Aug.) 1946

Metabolic Changes Induced by Synthetic 11-Dehydrocorticosterone Acetate, Including Comparative Studies with Synthetic Desoxycorticosterone Acetate, Natural 17-Hydroxycorticosterone and Lipoadrenal Cortex (Preliminary Report). P. H. Forsham, G. W. Thorn, Grace E. Bergner and K. Emerson.—p. 105.
11-Dehydrocorticosterone: Its Effects on Hypoadrenalism in Man. G. A. Perera, D. W. Blood and Kathryn H. Reinhold.—p. 135.
Primary Systemic Amyloidosis. H. N. Eisen.—p. 144.
*Relation of Cardiac Enlargement to Hypertension in Acute and Chronic Glomerulonephritis. J. V. B. Dean.—p. 161.
Bronchogenic Carcinoma. L. F. Clerf and P. A. Herbut.—p. 168.
Experimental and Clinical Evaluation of Synthetic Antihistaminic Drugs. S. Friedlaender.—p. 174.
*Comparative Study of Treatment of Tularemia with Immune Serum, Hyperimmune Serum and Streptomycin. L. Foshay.—p. 180.

Relation of Cardiac Enlargement to Hypertension in Glomerulonephritis.—Dean points out that the incidence of cardiac failure in glomerulonephritis is high, but opinions still vary about the cause of cardiac enlargement and cardiac failure. He reports 3 cases of acute glomerulonephritis with persistent enlargement of the heart associated with little or no hypertension and 3 cases of chronic glomerulonephritis with persistent hypertension but with little or no increase in heart size above the normal range of cardiothoracic ratio until shortly before death. He concludes that cardiac enlargement occurring in acute glomerulonephritis may persist for many years after the acute attack without evidence of significant hypertension at any time. Hypertension occurring in chronic glomerulonephritis may be present for many years without evidence of significant cardiac enlargement as determined clinically. Thus the height of the blood pressure and size of the heart as determined clinically in glomerulonephritis may be completely unrelated.

Immune Serum, Hyperimmune Serum and Streptomycin in Tularemia.—Comparisons based on records from 832 patients who received immune serum, 60 who received hyperimmune serum, 9 who received streptomycin and 542 who received only symptomatic treatment reveal that treatment of tularemia patients with immune serum before the end of the second week of disease induced significant reductions in mortality and in all aspects of morbidity. Greater reductions in morbidity were effected by treatment with hyperimmune serum or streptomycin. Of the agents studied only streptomycin and hyperimmune serum reduced the mean duration of disease to less than 2.5 months if treatment was given later than the second week. A comparative study of therapy to recovery intervals indicated that the nature of the disease imposed limits on the results obtainable by all forms of therapy. It indicates also that future comparisons should demonstrate a superior effectiveness of streptomycin in diminishing morbidity, and, since it is already shown to be a better agent for treatment of the desperately ill patient, that streptomycin will become the treatment of choice for tularemia.

American Journal of Ophthalmology, Cincinnati

29:929-1070 (Aug.) 1946

Mustard Gas Burns of Human Eyes in World War II. G. I. Uhde.—p. 929.
Early Ocular Manifestations in Laurence-Moon-Biedl Syndrome. D. J. Lyle.—p. 939.
Plastic Eye Implant. A. D. Ruedemann.—p. 947.
Eye Examination in Differential Diagnosis of Disoriented Patient. B. Milder.—p. 953.
Ophthalmopedics. J. J. Kohout and A. Callahan.—p. 968.
Treatment of Uveitis Associated with Toxoplasmosis. A. C. Krause and L. F. Smith.—p. 977.
Exophthalmos Caused by Eosinophilic Granuloma of Bone. M. Wheeler.—p. 980.
Plastic Artificial Eye Program. S. F. Erpf, M. S. Wirtz and V. H. Dietz.—p. 984.
Methacrylic Resin Implant for Sunken Upper Lid Following Enucleation. H. S. Sugar and H. J. Forestner.—p. 993.
Charting Diplopia and Muscle Action. J. I. Pascal.—p. 1001.
*Streptomycin Treatment of Corneal Abscess Caused by Escherichia Coli. W. C. Owens.—p. 1007.
Reconstruction of Floor of Orbit: Case. I. Givner.—p. 1010.

Streptomycin in Corneal Abscess Due to Escherichia Coli.—A man aged 54 had a severe corneal abscess caused by Escherichia coli. Owens reports that the abscess continued to progress in spite of intramuscular and local application of penicillin and the oral administration of sulfamerazine. When on the seventh hospital day streptomycin became available, the local use of penicillin was discontinued and two drops of a solution containing 500 standard units of streptomycin per cubic centimeter were instilled into the right eye every hour during the day and night. In forty-eight hours definite improvement was evident. On the fifteenth hospital day the systemic use of penicillin and sulfamerazine was discontinued. At the same time, through a mistake in dilution, the concentration of the streptomycin instilled into the conjunctival sac was increased to 10,000 standard units per cubic centimeter. This concentration was used for one week, after which the original dilution containing 500 standard units per cubic centimeter was used again. During this period of increased dosage the eye continued to improve steadily. The local use of streptomycin was continued for twenty-three days. At that time the corneal abscess had healed and was replaced by an epithelized leukoma.

Archives of Surgery, Chicago

53:1-110 (July) 1946

*Cholecystitis with Perforation. G. A. Johnstone and J. E. Ostendorph.—p. 1.
Removal of Shell Fragment from Left Ventricle of Heart: Report of Case. W. B. Schaefer and V. P. Satinsky.—p. 13.
Reconstructive Otoplasty: Further Observations; Utilization of Tantalum Wire Mesh Support. P. W. Greeley.—p. 24.
*Blocking of Splanchnic Nerves and First Lumbar Sympathetic Ganglion: Technic, Accidents and Clinical Indications. A. de Sousa Pereira.—p. 32.
*Pulmonary Suck and Blow as Respiratory Analeptic: Interdependence of Cardiac Massage and Suck and Blow Resuscitation. J. Reicher.—p. 77.
War Wounds of Arteries. R. Warren.—p. 86.
Glomus Tumors (Angioneuromyomas): Clinical and Pathologic Report of Unusual Case. H. Jackson and Ruth Balkin.—p. 100.
Migratory Polyphlebitis. B. J. Ficarra.—p. 105.

Cholecystitis with Perforation.—Johnstone and Ostendorph found 32 instances of perforation of the gallbladder in a review of 12,000 consecutive routine necropsies done at the Los Angeles County Hospital, or approximately in 1 out of every 375 cases coming to necropsy. Its true incidence places the acutely diseased gallbladder high on the list of potentially fatal conditions as found in acute conditions within the abdomen. The dangers of so-called medical, or conservative, treatment of acute cholecystitis are emphasized. Once the diagnosis of acute cholecystitis is made, particularly in patients past 50, surgical intervention should take place as early as is consistent with adequate preparation. Interval cholecystectomy should be done in cases of recurrent chronic cholecystitis. Operation within forty-eight hours, employing cholecystectomy, is regarded as the effective means of lowering the mortality in acute cholecystitis. A mortality rate of 2.9 per cent for patients operated on within forty-eight hours compares favorably with the findings of other proponents of early operation. Early surgical intervention will lower the mortality from acute perforated cholecystitis just as surely as it has lowered the mortality from acute perforative appendicitis. The results in 105 cases of acute cholecystitis in which operation was performed show that mortality increases in proportion to the time of operative delay.

Blocking of Splanchnic Nerves.—De Sousa Pereira's report covers more than a thousand anesthetic blocks of the splanchnic nerves or of these nerves and the first lumbar sympathetic ganglion. Of the two routes of approach available for blocking the splanchnic nerves, the posterior approach was employed routinely in these investigations. When repeated anesthetic blocks were indicated, the needle was inserted not always at the same point but at different points in an area determined according to the topography of the splanchnic nerves and the first lumbar ganglion in relation to the skeleton. Encouraging results were obtained in the diagnosis and treatment of patients with cardiospasm, visceral pain and peptic ulcer. Single or repeated anesthetic blocks of the splanchnic nerves and first lumbar ganglion were tried in cases of paralytic ileus, megacolon and hypertension and in the postoperative period of abdominal operations as a method of diagnosis or treatment or as a test before splanchnicectomy. The results observed point out the clinical importance of anesthetic block of the splanchnic nerves and the first lumbar ganglion.

Interdependence of Cardiac Massage and Suck and Blow Resuscitation.—Reicher presents the results of studies supplementing those made by Thompson and Birnbaum, who have shown that alternating suction-inflation causes a reflex stimulus to respiration. A series of preliminary experiments were performed for the purpose of studying the lungventilator apparatus and to determine the value of suction and suck and blow in resuscitation. Reicher stresses that while the importance of combining cardiac massage with pulmonary ventilation in resuscitation have been demonstrated by Coryllos and by Thompson and Birnbaum, his experiments indicate that such a combination would frequently be inadequate if the pulmonary measures consisted in either pressure or suction used alone. The clinical implications are that suck and blow is the ventilation of choice when combined with cardiac massage. Both cardiac and respiratory stimulation should be used in asphyxia. Either alone is often ineffective. Unlike pressure, suction exerts a stimulatory effect on respiration, as indicated by the inspiratory gasp caused by a suction stroke. No such effect is noted with manual artificial respiration.

Bulletin of Johns Hopkins Hospital, Baltimore

79:1-96 (July) 1946

Effect of Penicillin in Experimental Intestinal Obstruction: Studies on Strangulated Low Ileal Obstructions. A. Blain and J. D. Kennedy.—p. 1.

*Intestinal Obstruction: Study of 204 Acute Cases with Reference to Possible Efficacy of Antibacterial Therapy. R. J. Calihan, J. D. Kennedy and A. Blain III.—p. 21.

Location of Conscious Center in Brain: Corpus Striatum. W. E. Dandy.—p. 34.

Studies on Altitude Tolerance. 1. Studies on Normal Rats—Effect of Repeated Short Exposures to Reduced Atmospheric Pressure. G. W. Thorn, M. Clinton Jr., S. Farber and H. W. Edmonds.—p. 59.

Id. 2. Studies on Normal Human Subjects—Effect of Repeated Short Exposures to Reduced Atmospheric Pressure. M. Clinton Jr., G. W. Thorn and Virginia D. Davenport.—p. 70.

Intestinal Obstruction.—Calihan and his associates investigated the clinical and necropsy records of the patients who have been treated surgically for acute mechanical intestinal obstruction of the small bowel at the Johns Hopkins Hospital for the ten year period 1936-1945. Complete obstruction was proved at operation in all cases as evidenced by distended loops above and collapsed loops below the site of the lesion. Of 204 cases reviewed 116 were simple mechanical obstructions, 27 were cases of volvulus, 35 were cases of internal hernia and 26 were cases of intussusception. There were 41 deaths, a mortality rate of 20 per cent. By excluding the cases in which death was not due directly to the intestinal obstruction (death due to cardiac failure, pneumonia, aspiration and death during spinal anesthesia) the corrected mortality rate was 15 per cent. Peritonitis was the greatest single cause of death accounting for 55 per cent of the fatalities. The authors cite the experimental work of Blain and Kennedy, in which massive doses of penicillin prolonged the lives of dogs with strangulated obstruction, and the studies of Blain, Kennedy, Calihan and Harkins, in which such dogs could be cured by resection at a period which was twice the survival time of control dogs not treated with penicillin. This would seem to indicate that penicillin may serve a similar useful purpose in strangulated intestinal obstructions in man. Penicillin is suggested as an aid to sound surgical therapy and not as another adjuvant with which to temporize in the treatment of acute mechanical intestinal obstruction.

Journal of the Mount Sinai Hospital, New York

13:65-118 (July-Aug.) 1946

Myocardial Insufficiency. E. P. Boas.—p. 65.

*Electroencephalogram in Subarachnoid Hemorrhage. J. Greenstein and H. Strauss.—p. 76.

Lateral Decubitus Position in X-Ray Examination of Chest. S. Richman.—p. [illegible]

Combined Ileovesical and Sigmoidovesical Fistula Secondary to Diverticulitis: Case. A. Saleti.—p. 86.

Essays on Biology of Disease. E. Moschcowitz.—p. 90.

*Massive Pulmonary Embolism: VIII. Based in Part on Study of 88 Fatal Cases. H. Neuhof and S. H. Klein.—p. 99.

Electroencephalogram in Subarachnoid Hemorrhage.—Greenstein and Strauss studied 29 cases of massive extravasation of blood into the subarachnoid space caused by rupture of a congenital or acquired arteriosclerotic aneurysmal dilatation of a cerebral vessel or provoked by trauma causing laceration of blood vessels. The diagnosis of subarachnoid hemorrhage was confirmed in all cases by the presence of blood in the spinal fluid. Eighteen patients presented only a meningeal syndrome clinically. Five patients showed focal as well as meningeal signs, 2 patients presented only focal signs and 4 patients presented neither focal nor meningeal signs. A correlation was found to exist between clinical cortical foci and focal abnormalities in the electroencephalograms. Neither the presence of blood in the spinal fluid nor the presence of meningeal symptoms bears any relation to the electroencephalogram. In all cases the degree of abnormality in the electroencephalogram showed a progressive diminution when repeated examinations were made at increasing intervals of time; this observation was not found as a rule in brain tumors, and it may offer an aid in the differential diagnosis between a bleeding cerebral tumor and a subarachnoid hemorrhage due to some other cause. No increase in the degree of electroencephalographic abnormality was noted in subsequent records, once the hemorrhage had ceased.

Massive Pulmonary Embolism.—Neuhof and Klein studied 88 fatal cases of massive pulmonary embolism. The factors producing death were obstruction of the pulmonary artery, asphyxia and heart failure. The fatal episode took place at any time during a medical illness (26 cases) or in the surgical postoperative period (62 cases). Of the 62 deaths in operative cases 21 occurred in the first week, 14 of these in the first few days. Only 26 were encountered in the second week, chiefly in the classic period of the eighth to the twelfth day. There was no dependable relationship between the degree, the location or the extent of the pulmonary embolus and the clinical picture. An operation always must be regarded as exploratory. A significant fact concerning the cases to be regarded as favorable for embolectomy was that the duration of life after the onset of symptoms was short in many. This is out of line with the protracted duration of life for which Trendelenburg's operation of pulmonary embolectomy has been advocated. Because of the criticisms of this operation the authors devised a transcardiac operation resting on the principle of noninterference with the pulmonary artery, the attempt being made to extract the thrombus by suction through an incision in the right ventricle. This operation was performed on an athlete aged 18 years. No thrombotic material was obtained from the main trunk of the pulmonary artery. The patient died fifteen minutes after the operation. Necropsy revealed that thrombi filled the right and left branches of the pulmonary artery. The operative procedure is simple and does not require a special team. The suction results in some measure of decompression of a right ventricle which is laboring unavailingly against the obstructing embolus and thus is a desirable feature, but the operation does not provide assurance that suction will engage the thrombus in the eye of the catheter or the end of a metal tube. Despite the fatal issue in the reported case further attempts to extract a pulmonary embolus through the right ventricle appear justified.

Journal of Pediatrics, St. Louis

29:1-128 (July) 1946

Streptomycin in Treatment of Influenzal Meningitis. J. R. Birmingham, R. Kaye and Margaret H. D. Smith.—p. 1.

*Influenzal Meningitis: Report of 3 Cases Treated with Streptomycin and Sulfadiazine. S. Nussbaum, S. Goodman, C. Robinson and I. Ray.—p. 14.

*Tridione: Its Use in Convulsive and Related Disorders. M. A. Perlstein and M. B. Andelman.—p. 20.

Comparison of Vitamin C in Mothers and Their Newborn Infants. I. B. Slobody, R. A. Benson and Joan Mestern.—p. 41.

Diagnosis and Management of Severe Infections in Infants and Children: Review of Experiences Since Introduction of Sulfonamide Therapy. V. Staphylococcal Empyema: Importance of Pyopneumothorax as Complication. G. B. Forbes.—p. 45.

Bilateral Renal Agenesis. Edith L. Potter.—p. 68.

Laboratory and Clinical Criteria of Rheumatic Carditis in Children. I. M. Taran.—p. 77.

Immunization Against Whooping Cough. J. H. Lapin.—p. 90.

Craniopharyngiomas in Children. F. D. Ingraham and H. W. Scott Jr.—p. 95.

Streptomycin and Sulfadiazine in Influenzal Meningitis.—Nussbaum and his co-workers administered streptomycin concurrently with sulfadiazine to 3 infants aged 9 months, 16 months and 15 months in whom rapid recovery was obtained in the presence of severe influenzal infection of the meninges

The streptomycin was used both intrathecally and intramuscularly with no evidence of toxicity or undue reactions. Recoveries were complete in all 3 cases with no evidence of damage to the nervous system. Fifty thousand micrograms of streptomycin was given intrathecally daily until spinal fluid cultures were negative and clinical improvement was definite. Fifty thousand micrograms of streptomycin was given intramuscularly every three hours until a total of 3 Gm. was given in each case. Sulfadiazine in large doses was also given. Although this small series does not warrant definite conclusions, the dramatic influence of streptomycin is significant in patients under 2 years of age when prognosis is poor even with the use of the other antibiotics.

Tridione in Convulsive Disorders.—Clinical experience with tridione over a period of sixteen months in 75 patients with convulsive and related disorders has left Perlstein and Andelman with the impression that it is the most effective drug yet employed in the treatment of petit mal. Its anticonvulsant effect in the control of grand mal attacks is not as great as that of diphenylhydantoin sodium, phenobarbital or the bromides. It may occasionally be of value as an adjuvant in the control of major attacks not adequately controlled by other drugs. It is more effective in idiopathic than in organic epilepsy. It is of value in reducing the tension or rigidity of patients with cerebral palsy. Of these, athetoids are benefited more than spastic children. It may be of value in the temporary control of children with behavior disturbances. It may be of value in the control of the convulsions and respiratory spasms of tetanus when given intravenously, but it is of no particular value in chorea, parkinsonism or dystonia musculorum. Tridione is a safe drug to use, since no permanent deleterious effects, addiction or tolerance were noted. Toxic symptoms are usually mild and consist of photophobia, visual blurring, dizziness and nausea. They occur more commonly in adults than in children and disappear promptly when the drug is withdrawn. Sudden stopping of the drug in epilepsy does not result in status epilepticus. When used in combination it is more effective with phenobarbital than with diphenylhydantoin. Chronic alcoholism increases tolerance to the drug. Since it is least effective in lesions of the pyramidal system and more effective in certain conditions with extrapyramidal lesions, it is suggested that its site of action is probably in the midbrain and/or areas in the basal nuclei and/or on the cortical connecting tracts of these areas.

New England Journal of Medicine, Boston

235:101-146 (July 25) 1946

*Treatment of Meningitis Due to Hemophilus Influenzae with Streptomycin: Report of 9 Cases. L. Weinstein.—p. 101.
New Experiences in Group Psychotherapy. C. Stein.—p. 112.
Ophthalmology. E. B. Dunphy.—p. 117.
Acute Fibrinopurulent Mediastinitis.—p. 136.
Empyema; Lung Abscess of Right Lower Lobe; Chronic Pneumonitis of Right Lower Lobe; Broncholiths, with Ulceration of Right and Left Bronchi.—p. 139.

Streptomycin in Meningitis Due to Hemophilus Influenzae.—Weinstein treated 9 cases of purulent meningitis due to type B Hemophilus influenzae in 7 and to an untypable strain in 2 with streptomycin, and complete recovery occurred in 7 cases. The drug was given intramuscularly in doses ranging from 15,000 to 125,000 units every three hours and intrathecally in amounts varying from 10,000 to 25,000 units every twenty-four hours. One of the two fatalities showed complete absence of response to the streptomycin. The other death was due to an intercurrent Staphylococcus aureus bronchopneumonia which was not affected by penicillin. The blood and spinal fluid were cleared of the causative organism in twenty-four to forty-eight hours in all cases except the 2 due to atypical strains. No relapses or sequelae of the influenzal meningitis were observed in the patients who recovered. There were no toxic reactions attributable to streptomycin in the nervous, hemopoietic or urinary systems. Two of the patients receiving streptomycin developed infections, in 1 meningitis and in the other bronchopneumonia (both with bacteremia) due to Staphylococcus aureus after they were completely free from H. influenzae. Careful watch must be maintained for early signs of this type of involvement. It is suggested that penicillin be used as soon as Staphylococcus aureus becomes the predominant organism in the nasopharynx, even before the evidence of invasion is present. Penicillin and streptomycin could be administered together from the time treatment is started. Streptomycin appears to be the drug of choice in the treatment of meningitis due to Hemophilus influenzae.

Philippine Medical Association Journal, Manila

22:1-42 (Jan.) 1946

Cobra Venom—Its Possibilities in Philippine Medicine. W. De Leon.—p. 1.
Symptomatology of Severe Ascaris Infestation. A. B. M. Sison and R. Rosales.—p. 7.
Modern Concepts in Diagnosis of Renal Tuberculosis. L. F. Torres.—p. 11.
Present Trends in Diagnosis and Treatment of Cancer. J. Z. Sta. Cruz.—p. 17.

22: 43-92 (Feb.) 1946

Monoamniotic Twins: Danger to Life of at Least One Twin. H. Acosta-Sison, G. T. Aragon and A. de la Paz.—p. 43.
Radiologic Finding in Syphilis of Rectum. P. S. Chikiamco.—p. 47.
Sixty-Two Consecutive Cases of Symphyseotomy. A. Baens.—p. 49.
Recent Experiences with Transurethral Urologic Surgery. L. F. Torres.—p. 58.

Public Health Reports, Washington, D. C.

61:1131-1170 (Aug. 2) 1946

*Epidemiologic Aspects of Sensitivity to Histoplasmin and Tuberculin. M. L. Furcolow, R. H. High and M. F. Allen.—p. 1132.
Tuberculosis Throughout the World: I. Prewar Distribution of Tuberculosis Throughout the World. Sarah E. Yelton.—p. 1144.

61:1171-1202 (Aug. 9) 1946

Analysis of Design and Performance of Airplane Exhaust Generators for Production of DDT Aerosols for Control of Anopheles Quadrimaculatus. C. W. Krusé and R. L. Metcalf.—p. 1171.
DDT in Paradichlorobenzene as Larvicide. H. A. Johnson and J. L. Eason.—p. 1185.

61:1203-1230 (Aug. 16) 1946

The United States Public Health Service Communicable Disease Center. J. M. Andrews.—p. 1203.
Time per Service in a Children's Dental Clinic. I. Altman.—p. 1211.

Epidemiologic Aspects of Sensitivity to Histoplasmin and Tuberculin.—Furcolow and his associates cite several recent reports which have shown that there is a close relationship between sensitivity to histoplasmin and pulmonary calcification. Early in 1945 an extensive study was begun in Kansas City, Mo., to determine the significance of age, sex, race, residence and socioeconomic, familial and other factors in the sensitivity to histoplasmin. Histoplasmin and tuberculin skin tests and chest x-rays were made on over 17,000 persons. It was found that the percentage of positive histoplasmin reactors among white persons is slightly higher than among Negroes, higher among males than among females, and higher among nonlifetime residents than lifetime residents. The percentage of positive tuberculin reactors is three times higher among Negroes than among white persons. Little difference was observed between males and females and between lifetime and nonlifetime residents. The frequency of pulmonary calcification is over twice as high among reactors to histoplasmin alone as among reactors to tuberculin alone. The frequency of calcification among those who reacted to neither test was very low, equaling 2.6 per cent. Among those who reacted to either tuberculin or histoplasmin there is a considerable increase with age in the occurrence of calcification.

Tennessee State Medical Assn. Journal, Nashville

39:231-270 (July) 1946

Precancerous Lesions of Rectum and Colon: Diagnosis and Treatment. O. C. Gass.—p. 231.
Radiologic Survey of Urinary Tract—Excretion Urography. R. A. Arens.—p. 237.
Tropical Medicine: Aspects of Significance to American Physician. V. H. Haas.—p. 241.
Inguinal Hernia. R. M. Pool.—p. 247.
Treatment of Pyogenic Infections of Central Nervous System. W. F. Meacham.—p. 252.

39:271-310 (Aug.) 1946

Influence of Mind in Producing Health and Disease. T. B. Wright.—p. 271.
Pruritus Ani. M. W. Holehan.—p. 282.
Surgery of Sympathetic Nervous System. E. T. Newell.—p. 287.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

19:301-348 (Aug.) 1946

Physicist in Radiodiagnostic Department. M. H. Jupe and L. A. W. Kemp.—p. 301.
Calcium Gluconate Injection into Muscle. J. W. McLaren.—p. 314.
Simple and Accurate Method for Localization of Intraocular Foreign Bodies. G. I. Scott and P. A. Flood.—p. 318.
"Milk of Calcium" or "Limy" Bile. J. A. G. F. Rose.—p. 323.
Note on Radiography as Aid to Beam Direction in Radiotherapy. H. G. Davies and M. Halberstaedter.—p. 326.
Effect of Extra Vitamin B Feeding on Rats Exposed to Weak Gamma Radiation. G. M. Scott.—p. 329.
Preparation of Radiosulfur (S^{35}) and Its Determination in Biologic Tracer Experiments. T. E. Banks.—p. 333.
Assessment of Dosage from Linear Radium Sources. R. G. Mitchell. —p. 339.
Computor for X-Ray Isodose Curve Production. J. H. Martin. p. 343.

British Medical Journal, London

2:149-184 (Aug. 3) 1946

Presidential Address: Medicine in Transition. H. Lett.—p. 149.
*Problems Arising from Use of Penicillin in Gonorrhea. R. C. L. Batchelor, W. H. Donald and M. Murrell.—p. 151.
Individual Resistance to Malignant Disease Illustrated by Case in Which Metastatic Deposit from Carcinoma of Breast Occurred in Appendix and Led to Perforation and Peritonitis. M. C. Oldfield.—p. 153.
Biliary Peritonitis Without Demonstrable Perforation. D. P. Burkitt. —p. 155.
Epidemic Pleuritic Pain: Review of 17 Cases in Miltiary Camp, India Command. J. Roche and F. G. Smiddy.—p. 157.
Case of Human Rabies in Sierra Leone. E. J. Wright and Minnie Gosden.—p. 158.
Amenorrhea at Stanley Camp, Hong Kong, During Internment. Annie Sydenham.—p. 159.

Penicillin in Gonorrhea.—Batchelor and his associates found that in 190 male and 55 female patients with gonorrhea a two injection scheme (twice 200,000 units) gave cure rates of 95.8 per cent and 90.9 per cent respectively. The dosage of penicillin used for gonorrheal infections may apparently delay the development of concomitant syphilis, and for this reason cases must be observed for at least six months. Failure of the two dose technic is not likely to produce resistance to penicillin. Routine irrigation is not necessary with penicillin treatment, but it may be tried if a urethral discharge persists for longer than three days. The two dose method, using saline solutions of sodium penicillin, is simple and easily applied.

Lancet, London

2:149-184 (Aug. 3) 1946

Visual Defects in Prisoners of War from Far East. H. E. Hobbs and F. A. Forbes.—p. 149.
*Intrathecal Streptomycin in Meningitis: Clinical Trial in Tuberculous, Coliform and Other Infections. H. Cairns, E. S. Duthie and H. V. Smith.—p. 153.
*Folic Acid in Treatment of Pernicious Anemia: Report of 5 Cases. J. F. Wilkinson, M. C. G. Israëls and F. Fletcher.—p. 156.
Benadryl in Hay Fever: Note on Its Action. D. Harley.—p. 158.

Intrathecal Streptomycin in Meningitis.—Cairns and his co-workers administered streptomycin intrathecally in meningitis due to organisms which have been shown to be sensitive to streptomycin in vitro and in laboratory animals. Streptomycin was given intrathecally in solutions of from 10,000 to 20,000 units per cubic centimeter of isotonic solution of sodium chloride. Seven cases of meningitis were treated, and preliminary tests were made on 2 persons with inoperable malignant brain tumor. All 3 cases of pyocyaneus meningitis, the case of influenzal meningitis and the 2 cases of tuberculous meningitis were fatal. The case of achromobacterium meningitis was the only one in which recovery occurred. These cases indicate that treatment of advanced pyocyaneus meningitis with intrathecal streptomycin is not likely to be effective. In meningitis of recent onset the results of streptomycin are less discouraging. In the achromobacterium infection there was prompt subsidence of infection after use of streptomycin. In the infant with Hemophilus influenzae infection streptomycin treatment was followed by decrease in the number of the organisms and by clinical improvement. Cerebral vascular thrombosis then developed, and the infection recurred. Doses of 80,000 to 100,000 units once or twice daily are probably necessary, and in acutely ill patients such injections are not free from danger. Injections should be given slowly, and a safety valve should be provided in the form of an indwelling ventricular catheter draining at a pressure of 200 mm. of water. Some of the untoward reactions may have been the result of impurities.

Folic Acid in Pernicious Anemia.—Wilkinson and his associates employed folic acid in the treatment of 5 patients with pernicious anemia. The patients had the typical uncomplicated clinical picture of relapsing pernicious anemia—megalocytic anemia, megaloblastic marrow and achlorhydria but no signs of neurologic involvement. They were either untreated or had had no effective treatment for some months. There was a preliminary control period of at least two weeks during which no treatment was given, the reticulocyte count remained low and red cells and hemoglobin did not show a rise. The folic acid produced clinical remissions, with return of the marrows to normoblastic from megaloblastic states, and a restoration of blood counts toward normal levels. The achlorhydria persisted. These results show that synthetic folic acid will bring about remissions in patients with true addisonian pernicious anemia, and the responses seem in every way comparable to those obtained with liver extracts. The dosage used, 20 mg. by mouth daily at first, reduced to 10 mg. when the remission is well advanced, appears to be minimal, and some patients may need more. In 1 case parenteral administration was highly successful.

Medical Journal of Australia, Sydney

2:37-72 (July 13) 1946

Tsutsugamushi Disease: Attempted Preparation of Prophylactic Vaccine from Fertile Hen's Eggs Experimentally Infected with the Virus. R. Lewthwaite, J. L. O'Connor and S. E. Williams.—p. 37.
*Penicillin Resistant Staphylococci in Wounds: Report Based on Study of 59 Cases of Infected War Wounds. E. A. North, R. Christie and B. K. Rank.—p. 43.
Care of Patients with Severe Asthmatic Attacks. C. Sutherland.—p. 51.
Monilial Vaginitis: Report of 58 Cases. Muriel B. McIlrath.—p. 54.
Laboratory Study of Monilia Albicans. Phyllis M. Anderson.—p. 57.

Penicillin Resistant Staphylococci in War Wounds.—The total number of patients investigated by North and his associates was 59, and from these 328 cultures of hemolytic staphylococci were isolated and tested. Analysis of the results shows that with regard to the penicillin fastness of staphylococci the cases fall into four groups: (1) those associated only with penicillin sensitive staphylococci in the wounds, 10 cases; (2) those in which penicillin resistant staphylococci replaced penicillin sensitive organisms during the period observed, 10 cases; (3) those associated only with penicillin resistant staphylococci in the wounds, 35 cases; (4) those in which penicillin resistant and penicillin sensitive strains alternated, 4 cases. Individual wounds were usually found to harbor staphylococci biochemically and serologically identical during the period of observation. After prolonged penicillin therapy the staphylococci recovered from the wound as judged by tests in vitro were almost invariably found to be penicillin resistant. This resistance in vitro did not affect the clinical response to penicillin. This depended on the nature of the wound and not on the behavior of the organism to penicillin in vitro. The term penicillin resistant staphylococci is a misnomer. It has been shown that they are not in themselves penicillin fast but elaborate a penicillinase which destroys penicillin. It seems unwise to conceive that in no circumstances would the presence of penicillin fast strains in lesions infected by staphylococci adversely affect the response to penicillin therapy. It has been shown that mice injected intraperitoneally with a certainly fatal dose of penicillinase producing staphylococci were not protected against death by large doses of penicillin, while other animals injected with a penicillin sensitive strain were saved.

Practitioner, London

157:81-160 (Aug.) 1946

Malaria Patient. B. Maegraith.—p. 81.
Amebiasis. W. H. Hargreaves.—p. 93.
Surgery in the Tropics. D. Fettes.—p. 101.
Heatstroke and Sunstroke. J. B. Kirk.—p. 107.
Skin Diseases in the Tropics. A. G. Fergusson.—p. 114.
Social Medicine in the Tropics. W. H. Kauntze.—p. 123.
Rheumatic Symptoms in General Medicine. A. Abrahams.—p. 131.
"Mushroom" Poisoning. C. A. Birch.—p. 135.
Early Recognition of Disease: VIII. Nonspecific Arthritis in Adults. G. R. P. Aldred-Brown.—p. 141.

L'Algérie Médicale, Alger

pp. 203-306 (May-June) 1946

- *Heart and Beriberi: Clinical, Electrocardiographic and Roentgenologic Study Based on 100 Personal Observations. J. Casanova.—p. 203.
- Biopsy of Uterine Mucosa in Gynecologic Practice. P. Laffargue.—p. 225.
- Sulfonamide Therapy for Pulmonary Abscess. R. Raynaud, A. Huguenin and J. R. d'Eshougues.—p. 233.

Heart and Beriberi.—Casanova studied 100 cases of dry beriberi during an epidemic outbreak among Senegalese troops in Tunisia in 1940. The patients presented severe cardiac disorders resulting in death in inveterate cases of several months' duration, while in cases of wet beriberi the same cardiac manifestations but in a lesser degree, masked and occasionally attenuated, were amenable to treatment. There was a decided increase in pulse rate, with more than 100 beats per minute. Administration of digitalin increased the pulse rate and the discomfort of the patients, thus serving as a test for beriberi. Orthodiagrams revealed cardiac enlargement, particularly of the right portion, and violent throbs of the aorta and particularly of the pulmonary infundibulum. Electrocardiographic records showed a flattened P wave, prolongation of the PQ interval, an enlarged rapid QRS complex, a diphasic T wave, and in lead 3 a pronounced change of the ventricular wave of excitation, which took the form of a W or a capital M. These changes appeared to be irreversible even in early cases of dry beriberi in which the clinical signs, particularly the tachycardia, subsided as a result of vitamin therapy. In inveterate cases of dry beriberi the irreversible cellular changes affect the power of the myocardium to contract, causing an intracardiac disorder of conduction. Disturbances of tension and of rhythm may also be present which are manifested by a rather uniform clinical picture of cardiovascular erethism. An out of balance state of the glucides-vitamins relationship increased by excessive and prolonged action of the heart is to be considered the cause of these disturbances.

Revista Médica de Chile, Santiago

74:315-376 (May) 1946

- Differential Diagnosis of Various Forms of Jaundice: Clinical and Laboratory Study; Special Reference to Infectious Hepatitis and to Obstructive Jaundice. R. Armas-Cruz, E. Montero, J. Cabello and others.—p. 315.
- *Serum Coagulation of Weltmann in Hepatobiliary Diseases. H. Ducci and M. Yaikin.—p. 322.
- Surgical Treatment of Bronchiectasis. L. Langer and H. Salvestrini.—p. 328.
- *Encephalocranial Traumatism: New Treatment of Cerebral Edema: Preliminary Report. E. Fuentes Besoain.—p. 340.
- Hematologic Changes in Nephropathies. J. Bendek and E. del Campo O.—p. 345.
- Chagas Disease in Bolivia: Preliminary Report. L. Ponce Caballero.—p. 349.

Serum Coagulation of Weltmann in Hepatobiliary Diseases. — Investigation of the Weltmann coagulation band on 70 persons who were apparently healthy revealed that only about 75 per cent of them presented a normal coagulation band. Studies on 13 patients with localized hepatic processes revealed considerable variations which only in certain cases could be ascribed to the primary disorder. In the diffuse hepatic processes there existed a tendency toward an enlargement of the coagulation band. This enlargement was most noticeable in 48 of 62 cases of hepatic cirrhosis. The fact that only 3 of the patients with hepatic cirrhosis had a shortened coagulation band and that in these there existed processes which would explain the shortening (Hodgkin's disease, pregnancy and fibrocaseous tuberculosis) indicates that in case of shortening of the coagulation band the diagnosis of hepatic cirrhosis should be doubted. In cholecystitis the results are extraordinarily variable and permit neither diagnostic nor prognostic conclusions. Weltmann's coagulation reaction is of no special value in hepatobiliary disorders and does not deserve being included in the laboratory study of these conditions.

New Treatment of Cerebral Edema.—Fuentes Besoaín used Schemm's method, which consists of an acidotic diet without chlorides and the administration of large quantities of fluid in the treatment of posttraumatic cerebral edema. He has used this treatment in more than 20 cases, of which 2 are reported. Consciousness returns more rapidly with this than with other treatments. Diuresis begins to increase from twelve to twenty-four hours after the treatment is begun and a decrease in headache and nausea accompanies the augmentation in diuresis. The psychologic condition of these patients is much better than when the water intake is limited. The treatment is usually continued for three or four days after the subjective symptoms have disappeared. Total recovery usually requires between six and twelve days.

Nordisk Medicin, Gothenburg

30:799-866 (April 12) 1946. Partial Index

- Bronchoscopy as Diagnostic and Therapeutic Aid in Various Pulmonary Disorders. K. G. Rimér.—p. 799.

Hospitalstidende

- *Acute Anterior Poliomyelitis in Pregnancy. P. Horstmann, J. Ipsen and H. C. A. Lassen.—p. 807.
- *Broncholithiasis.* K. Bech.—p. 810.

Hygiea

- Five years of Specific Therapy of Thrombosis in Sweden. E. Jorpes.—p. 813.
- Schaumann's Disease and Relation to Pancreatic Disturbances. C. Ekelund.—p. 817.
- Nonviable Infants Treated with Massive Dose of Vitamin D Without Demonstrable Organic Injuries. K. Palmén.—p. 820.

Svenska Läkaresällskapets Förhandlingar

- Exogenic Disturbances in Rhythm. H. Holmgren.—p. 826.
- Pathogenesis of Cirrhosis of Liver. C. G. Ahlström.—p. 832.
- Pathophysiology of Cirrhosis of Liver. B. Josephson.—p. 835.
- Mental Diseases and Community. Hakon Sjögren.—p. 843.

Poliomyelitis in Pregnancy.—Horstmann and his associates state that of the 62 women aged between 20 and 34 with poliomyelitis treated in Blegdam Hospital during the 1944 poliomyelitis epidemic in Copenhagen 20 were pregnant; 15 were in the first half of the pregnancy. Three of these patients died in the acute stage of the disease, abortion occurred in 4 and the infant died shortly before or after delivery in 2 instances, while 11 children were born, all of whom developed normally after birth. Since the frequency of pregnancy in poliomyelitis here is about three times as high as might be expected from the birth rate of the population at the time, mere coincidence seems unlikely. No corresponding accumulation of cases of pregnancy in poliomyelitis has previously been observed at the hospital. No satisfactory explanation of the phenomenon was found. The increased incidence of poliomyelitis in adult age in recent years probably explains the susceptibility to poliomyelitis in pregnancy. In the 1943 poliomyelitis epidemic in Bleking 21 of the 53 women between 19 and 47 affected were pregnant (Dhunér, *Nord. Med.* **24**:2187, 1944).

30:867-922 (April 18) 1946. Partial Index

- Amino Acids and Plasma Proteins: Review. J. Bock.—p. 867.

Hospitalstidende

- *Heredity of Osteochondrodystrophy. Silverskiöld's and Morquio's Syndromes. F. Helweg-Larsen and E. Trier Mørch.—p. 877.

Norsk Magasin for Lægevidenskapen

- Results of Internal Treatment of Chronic Gastroduodenal Ulcer: Clinical Roentgenologic After-Examination of 263 Patients. L. Ulven and A. Aanonsen.—p. 888.
- Hyperinsulinism: 2 Cases Treated with Resection Where Apparently Normal Pancreas Was Found. H. F. Harbitz.—p. 894.
- Prognosis in Tendovaginal Panaritium: After-Examination of 151 Cases. H. S. Nissen-Lie.—p. 898.

Hygiea

- Formation of Aseptic Stones in Urinary Ducts. Greta Hammarsten.—p. 911.

Heredity of Osteochondrodystrophy: Silverskiöld's and Morquio's Syndromes.—From their survey of twenty-one families with osteochondrodystrophy reported in the literature Helweg-Larsen and Mørch conclude that there are two forms of the disorder, Morquio's syndrome, with skeletal changes localized especially in the vertebral column and inherited recessively, and Silverskiöld's syndrome, with skeletal changes mainly in the extremities and transmitted as a simple dominant character. This view is confirmed by the 12 cases described from three families with Morquio's syndrome and one family with Silverskiöld's syndrome. Isolated cases of Silverskiöld's syndrome perhaps originate through mutation.

Book Notices

Diseases of the Retina. By Herman Elwyn, M.D., Senior Assistant Surgeon, New York Eye and Ear Infirmary, New York. Cloth. Price, $10. Pp. 587, with 170 illustrations. Philadelphia & Toronto: Blakiston Company, 1946.

The author has attempted to present a complete work on retinal diseases, as none has been published since the work of Leber in 1916. The volume is divided into eight parts. While the illustrations are fairly complete, more colored illustrations would have added considerably to its value. Part 1 consists of 141 pages devoted to diseases of the retina resulting from disturbances in circulation. It is written in a logical style that should be fairly easily understood by students and practitioners. This section represents the most important part of the work, because without a thorough knowledge of its contents the remainder becomes meaningless. Considerable emphasis is placed on the various blood vessel changes frequently encountered, and the accompanying illustrations help to clarify the contents. Diseases of the retina resulting from vascular malformations follow. Parts 3 and 4, consisting of degenerative and inflammatory diseases of the retina, contain many microscopic illustrations tending to clarify the pathology involved. Such a presentation is lacking in most textbooks and tends to make this book considerably more valuable to the practitioner. The section on diseases of the retina leading to retinal detachments should have been more complete. There are too few colored illustrations present for essential teaching purposes, as most ophthalmologists are not too well versed on this subject. Modern methods of treatment are included but could have been more specific in details. The section on developmental anomalies of the retina is quite complete. The work as a whole will undoubtedly fill a breach in the present ophthalmologic literature and will be a valuable addition to the library of ophthalmologists.

Skin Diseases, Nutrition and Metabolism. By Erich Urbach, M.D., F.A.C.A., Associate in Dermatology, University of Pennsylvania, Philadelphia. With the collaboration of Edward B. LeWinn, B.S., M.D., F.A.C.P., Associate in Medicine, Jewish Hospital, Philadelphia. Fabrikoid. Price, $10. Pp. 634, with 266 illustrations. New York: Grune & Stratton, 1946.

The author has been a prodigious worker in the field of cutaneous metabolism, and the full fruit of his intense efforts are displayed in this volume. The book is divided into five parts. Part one is devoted to the biochemistry of the skin and the influence of nutrition on its physiology; part two deals with the nutritional causes of dermatoses, including a discussion of cutaneous diseases due to malnutrition, food allergy and alimentary infections and intoxications. Part three is concerned with cutaneous diseases caused by alterations of the gastrointestinal tract, the liver and pancreas. The fourth portion of the book discusses nutritional therapy, and the fifth consists of tables intended to help in prescribing the necessary diets.

This book represents a laudable effort to make available at one source a large number of references on the nutritional aspects of the skin (more than 1,300). One would wish that the author had selected them more carefully and considered them more critically. As they are, they seem to be gathered together with the idea of missing nothing. No serious attempt is made to evaluate or integrate them. The result is, therefore, more in the nature of a compilation. The style is somewhat discoursive, which may aid the cause of intimacy between the author and the reader.

Much of the material is a report of the author's own work. This is presented in such fashion that it is difficult to dissociate actually proved facts from theories. The great bulk of this presentation is not corroborated and yet is presented as approved. A great many ideas presented are contrary to what is accepted by most dermatologists. The average dermatologist finds few places in his practice where dietotherapy is really effective. A novice, however, perusing this book would gain the impression that diet is the major attack. Either dermatologists are wofully behind in this modality or the author is overenthusiastic. He has a passion for employing not only unorthodox concepts but also terms.

Finally, one asks who would profit from reading this book. The student and general practitioner would be overwhelmed and not be capable of separating the wheat from the chaff. It might help the average dermatologist to become more conscious of the nutritional aspects of his specialty. The work, however, would find its greatest usefulness for the dermatologist seriously interested in metabolism or the investigator in general by providing a large number of references. For this, the author is to be thanked. It has meant a tremendous amount of work and drudgery.

A History of Medicine. By Douglas Guthrie, M.D., F.R.C.S., F.R.S.E. With an introduction by Samuel C. Harvey, M.D., F.A.C.S., Wm. H. Carmalt Professor of Surgery, Yale University School of Medicine, New Haven, Connecticut. Fabrikoid. Price, $6. Pp. 448, with 72 plates. Philadelphia, London & Montreal: J. B. Lippincott Company, 1946.

By tradition the physician of bygone days was not only the healer but, together with the clergyman, the scholar of the European and American community; however, the tradition may represent a degree of wishful thinking. "Southern cooking isn't what it used to be—and never was!" might fit the situation. Be that as it may, certain it is that in this era of science—and *particularly in the past five years of speeded instruction in the* medical curriculum of our student body—the opportunity for the attainment of a broader cultural background has been restricted. With this in mind it might seem that the very minimum for a physician might include some knowledge of the development of his own profession. Under the circumstances it is gratifying to observe greater interest in the history of medicine, as evidenced by the expansion in the field of special journals, in monographs, both American and English, even in advertising mediums that appeal to the profession. This work of Guthrie's is a useful contribution in this direction. He presents a comprehensive but readable review of medical history that might be added to every physician's library with profit. Particularly impressive is the balance that he has been able to maintain throughout the book—in itself of real importance for a work of this character. For the modern period he has given impartial credit to the schools of the various countries. The role of the basic sciences, the development of the specialties, the technical achievements are all well integrated. The background of ancient practice is adequately treated, and the significance of the Renaissance for the rapid development of the true scientific interest that followed immediately in its wake provides a fascinating section. The appendix provides a short but useful bibliography and, together with a good index, makes reference easy. The illustrations are useful even if not quite up to the quality of the text or to prewar standards.

Off to a Good Start: A Handbook for Modern Parents. By Irma Simonton Black. Cloth. Price, $2.50. Pp. 256, with illustrations by Lydia Cooley. New York: Harcourt, Brace and Company, 1946.

This is a nontechnical handbook about the day to day problems which confront the modern parents of young children. The excellent advice it contains is based on the now well established standards of normal behavior. The author's vast experience and excellent method of imparting her acquired knowledge in this field make it easy for the reader to follow the widening circle of the child's interests and activities. Part I, on the child himself and his habits, deals with his training and growth. Part II, on the child and his family, takes up discipline and punishment. Part III, on relation with other people, analyzes different types of children. Part IV, on adventuring in a larger world, deals with new experiences. Part V, on intellectual growth, takes up the methods of acquiring information, creative play and language. The book is written so that parents with at least a high school education can understand and execute the wealth of advice the author imparts.

Tablas del valor vitaminico de productos vegetales comestibles. Ministerio del Interior, Dirección nacional de salud pública, publicaciones del Instituto nacional de la nutrición, director general Prof. Dr. Pedro Escudero. Paper. Price, 2.50 pesos. Pp. 53. Buenos Aires: Instituto nacional de la nutrición, 1945.

This book is a compilation of tabulated data showing the principal vitamin values for both fruits and vegetables. Methods of analysis are described.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

POOLED BLOOD FOR BLOOD BANKS

To the Editor:—Please discuss the use of pooled whole blood in a blood bank. I contemplate establishing a blood bank and understand that pooled whole blood without the necessity of typing or cross matching is the newest accepted procedure. Marvin M. Harris, Ph.D., Macon, Ga.

Answer.—If the term pooled whole blood is meant to indicate a mixture of blood of the various groups, it may be said that this procedure is absolutely contraindicated in preparation for transfusion. Pooling of two or more different groups would result in agglutination and/or hemolysis of at least one of the bloods. For example, mixing of group O and group A blood would result in action of the anti-A antibodies of the O blood on the A cells.

Pooled lots of group O have been used for "universal donor" transfusions (Orr, W. H.: Pooling of Whole Type O Blood, *Hosp. Corps Quart.* **18**:53 [Oct.] 1945). The purpose of such pooling was to dilute the occasional group O blood with a high anti-A or anti-B agglutinin content with those which had a low or average agglutinin content. Thus there would be less danger of hemolysis or agglutination of the recipient's cells when the pooled group O blood was administered to patients of groups A, B or AB.

The practice of pooling group O blood for transfusion to recipients to all groups is not recommended in the operation of hospital blood banks because the process of pooling is apt to traumatize the cells or permit contamination.

The danger of administering high titer group O blood to an A, B or AB recipient may be avoided by dividing all group O donor bloods into two groups (McGraw, J. J.; Vaubel, E. K.; Reichel, John, Jr., and Elliott, John: Complications of Blood Transfusion, *Surg. Clin. North America* **25**:1024 [Oct.] 1945). Those with a relatively low titer may be used for recipients of group A, B or AB. Those with a higher titer may be used exclusively for group O recipients or converted to low titer bloods by the addition of Witebsky's A and B substances (prepared by Eli Lilly & Co.). "High titer" group O bloods may be separated from those with a comparatively low titer by testing a single dilution of the O serum against A and B cells. If the diluted serum agglutinates either A or B cells, it should be considered as having a high titer and therefore should not be administered to A, B or AB recipients.

It is difficult to recommend the exact dilution to be used, since various laboratories will differ in the interpretation of the tests. A technic should be chosen which results in labeling about 25 per cent of all O bloods as having a high titer. If the 25 per cent with the highest titers are used for O recipients it will be safe to use the other 75 per cent for A, B and AB recipients. Group O bloods which have a low or average content of anti-A and anti-B agglutinins may be used for patients of all groups without fear of a serious hemolytic reaction as a result of action of these agglutinins on the patients' cells. However, every transfusion should be preceded by a cross matching test except in the gravest emergency. In such cases low titer group O blood may be used. If the recipient is a woman or a man who has received previous transfusions the low titer group O blood should be Rh negative. Cross matching should be performed to check on errors in blood grouping and to check on the presence of atypical agglutinins in the patient's serum.

The use of two drops of the donor's citrated or oxalated whole blood and one drop of the recipient's inactivated serum spread thinly on a warm plate is recommended for the cross matching test. Diamond has shown that this test will detect anti-Rh agglutinins even in the presence of blocking antibody. It will also detect A B O incompatibilities.

REMOVAL OF MUST ODOR FROM BOOKS

To the Editor:—How can one get the smell of must out of papers and books? Don H. Duffie, M.D., Central Lake, Mich.

Answer.—The smell of must in books and papers arises from the growth of molds. There is no satisfactory way of inhibiting mold growth in a humid atmosphere. The only way is to keep books and papers in a dry place.

BRISTLE WORM IN STOOL

To the Editor:—The stool specimen of a patient with chronic enterocolitis of four months' duration showed the presence of a water crustacean identified as a "bristle worm." This form when found in well water is evidence of pollution by surface water. What is the suggested treatment after all conservative measures have proved futile? W. F. Giegerich, M.D., Atlantic, Iowa.

Answer.—The term "bristle worm" has been used in referring to one of the segmented worms of the class Chaetopoda. It may be that this is the worm in question. Regardless of the exact identity of the worm, the possibility that it represents a contamination of the feces occurring after the stool was passed should first be excluded. Such contamination is not uncommon and consequently organisms which do not come from the patient's gastrointestinal tract may at times be found in stool specimens submitted for examination.

When such worms as the bristle worm are ingested, it is not known that they can survive in the human gastrointestinal tract and furthermore, if they can, that they are capable of giving rise to symptoms of any kind including those of chronic enterocolitis. In the presence of diarrhea, with rapid passage of the gastrointestinal contents, ingested solids may at times be easily recognizable in the feces. So even though it can be conclusively demonstrated that the worms are both ingested and excreted by the patient, this does not constitute adequate evidence that the worms are the cause of the patient's symptoms.

Known causes of chronic enterocolitis must first be excluded, and, since there are many, numerous examinations may be necessary before a diagnosis is possible, including repeated examinations of the stools for parasites and bacteria of known pathogenicity, various blood agglutination tests, proctoscopy and x-ray examinations of the gastrointestinal tract, to mention only a few.

Insufficient information concerning the patient is given to permit more than superficial speculation as to the cause of the chronic enterocolitis. In view of these considerations there is no basis on which to recommend therapy. Certainly all measures usually employed in the treatment of parasitic infestations of the gastrointestinal tract seem contraindicated unless it is definitely known that the patient does not have any one of a number of possible infections or diseases. The drugs employed for the purpose are not uncommonly toxic even to those with a presumably intact gastrointestinal tract. In the patient under question the beneficial results that could be expected from such therapy seem so slight that the risks involved are not justified.

OBESITY, HYPOGONADISM, UNDESCENDED TESTES

To the Editor:—A boy aged 8 years has hypopituitarism. He weighs 94 pounds (42.6 Kg.) and has girdle type obesity and all the classic symptoms, including tiny genitalia and undescended testes. Roentgenograms show the sella turcica to be about one-third the normal size. He has been "shot" with about everything, including pituitary extract, anterior and posterior extracts of the gland and male sex hormone and has taken all kinds of tablets by mouth. Are there any recent developments in the treatment of such cases? W. B. Chapman, M.D., Joplin, Mo.

Answer.—Three problems are presented by the case described in the query: obesity, hypogonadism and undescended testes. The same material may be used for the undescended testes and the hypogonadism. The patient may be given 500 international units of chorionic gonadotropin by intramuscular injection three times a week. This treatment should be continued until moderate growth of the genitalia occurs. If the treatment is ineffective, testosterone propionate may be given in a dose of 25 mg. three times a week, and once again the treatment should be continued until moderate growth of the genitalia occurs. Occasionally when both testes are intra-abdominal they do not respond to chorionic gonadotropin. If testicular descent does not take place after the genitalia have shown moderate growth, operative procedures should be carried out at once for the correction of the cryptorchism. After the testes have been brought into the scrotum either by glandular therapy alone or by the combined use of glandular therapy and operative procedures, glandular therapy should be discontinued until the patient is about 11 years old. He is a little too young to undergo puberty. At the age of 11 chorionic gonadotropin or testosterone propionate, if chorionic gonadotropin is ineffective, may be started and continued until epiphysial closure takes place. It is impossible to state at this time whether or not some treatment of this type will be necessary for the remainder of the patient's life. He should be placed on a suitable reducing diet immediately to reduce his weight to the desired level, and thereafter it should be held there. Desiccated thyroid may be of aid as an adjunct in weight reduction but will have little or no effect on the genital growth and on the undescended testes.

DUST HAZARDS IN MANUFACTURE OF MANIKINS

To the Editor:—Are there any occupational hazards in the manufacture of display manikins? These are molded from plaster of paris, sandpapered, sprayed with lacquer paint and then packed in shredded newspaper. The atmosphere is usually filled with a mixture of plaster of paris dust, paint and newspaper dust. Would a person with sinusitis and severe chronic bronchitis suffer an extra risk? Should any precautions be taken?

M.D., New York.

ANSWER.—This situation introduces a number of theoretical opportunities for small injuries. Lacquers contain acetates, the vapors of which may be mildly irritating to any person. Sandpaper depends on silica for its abrasive action. If the silica dust created is extensive and the exposure prolonged, the possibility of silicosis exists. Dust counts will afford some index of the total dust present, but special procedures will be required to establish the proportion of free silica. Plaster of paris (calcium sulfate) is rated only as a nuisance dust, but gross amounts of any nuisance dust are objectionable and may, on a mechanical basis if not chemical, be disturbing to workers, especially those with nasal disorders. The quantity of dust from packing with shredded paper is likely to be negligible. In larger operations such as the press rooms of daily papers, complaints arise of alleged irritation from paper dust and ink. However, serious cases are not known. In general any worker with the disease states mentioned in the query would be more responsive to these mild irritants than a healthy worker. For protection due consideration should be directed to the feasibility of exhaust systems, either general or local, depending on the quantities of dusts or vapors present. Nuisance dust respirators which are readily available will bar coarse dusts such as from paper but cannot be relied on as protection against either vapors or silica dust.

EFFECT OF FLUORIDE IN FLAC TABLET

To the Editor:—A tablet named Flac, manufactured by the Flac Company, Newark, N. J., contains calcium (or CaO) 0.113 Gm., phosphate 0.153 Gm., fluoride 0.00012 and vitamin D 70 U. S. P. units. Several patients have asked whether the fluoride contents of this tablet will affect the sex glands and cause sterility.

F. J. DeCesare, M.D., Roselle Park, N. J.

ANSWER.—Atrophic changes may be produced in the testes and perhaps in the ovaries of rats by continued feeding with fluoride at the rate of 20 to 30 mg. of fluorine per kilogram of body weight daily. For a 70 Kg. man this would amount to a daily intake of 1,400 to 2,100 mg., at least twelve thousand times the 0.12 mg. said to be contained in a Flac tablet. Sterility occurs only as the result of advanced inanition. It would be more reasonable to fear mottling of the tooth enamel, which may occur in children with a daily fluorine intake of about 2.5 mg., about twenty times the amount in the Flac tablet. The normal daily intake of fluorine varies with the water supply but averages about 2 mg., or fifteen times the amount in the Flac tablet.

References:

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ARTERIOSCLEROSIS AND CALCULUS FROM CALCIUM AND PHOSPHORUS ADMINISTRATION

To the Editor:—Wafers of dicalcium phosphate 9 grains (0.6 Gm.) and calcium gluconate 6 grains (0.4 Gm.) with viosterol one to three times daily are often effective in reducing nervous irritability following alcoholism, pregnancy, infectious diseases or excessive fatigue. Will such continued calcium feeding increase the possibility of forming renal, ureteral or cystic calculi or arteriosclerosis?

Edward J. Kempf, M.D., Long Island, N. Y.

ANSWER.—There is no evidence to show that administration of the amounts of calcium and phosphorus mentioned in the query, in conjunction with normal requirements of vitamin D, would contribute to the formation of calcium deposits in a healthy urinary tract or blood vessels. The increased calcium and phosphorus content of the urine which such medication would cause may contribute to stone formation if predisposing local factors, such as stasis and infection, are present in the urinary tract. While it has never been proved that an arteriosclerotic process can be hastened by a moderate intake of vitamin D and calcium salts, yet, without a specific indication, it seems unwise to increase the calcium and vitamin D intake of elderly persons above that present in an adequate diet.

TOXICITY OF FLUORINE AND HYDROFLUORIC ACID

To the Editor:—Is it possible for fluorine gas to develop a complete anuria and destruction of one kidney necessitating the removal of the kidney?

M.D., Kansas.

ANSWER.—According to Largent, fluorine gas remains rarely as fluorine gas per se on exposure to air. With water vapor present, hydrofluoric acid is formed readily. Recently, however, fluorine has been made available commercially for research purposes. No one as yet seems to know exactly how the specific toxic reaction of fluorides is produced. Externally, fluorine is an irritant. Presumably the effects mentioned would be considered in respect to chronic poisoning, since only rarely does anuria occur in acute poisoning. In chronic poisoning anemia and gastrointestinal and neurologic reactions may be found. Albuminuria is not uncommon, but severe renal damage, as mentioned in the query, has not been reported even in the series on fluorine intoxication by Kaj Roholm. Although mild degrees of renal damage may occur as part of the picture of chronic (or even acute) poisoning, no such severe (infected secondarily?) proved fluoride renal damage necessitating surgical intervention has occurred. If it is possible, detailed chemical studies for fluorides as well as pathologic studies of the involved kidney should be done. These should be correlated with fluoride excretions studies of the individual.

STANDARDIZATION OF ANDROGENS

To the Editor:—Some companies market the male sex hormone in capon units per cubic centimeter. How does this compare in strength with testosterone propionate? For example, how many milligrams of testosterone equal 1 capon unit?

A. C. Scott, M.D., Evansville, Ill.

ANSWER.—The international unit for androgenic activity is equivalent to 0.1 mg. of crystalline androsterone. One capon unit of activity is equivalent to 1.5 international units. One mg. of testosterone propionate contains approximately 50 international units, or about 32 capon units.

CIRCUMCISION OF NEWBORN

To the Editor:—An increasing number of obstetricians are circumcising newborn infants at the time of delivery. Is this a wise procedure? How great is the danger of hemorrhage?

M.D., Florida.

ANSWER.—Circumcision of the newborn infant is a wise procedure for the reason that it will prevent the occurrence of many penile disturbances in later life such as phimosis, paraphimosis and persistent balanoposthitis.

There is little danger of hemorrhage in the newborn unless the baby is suffering from some blood dyscrasia.

FLAT FEET IN CHILDREN

To the Editor:—The answer to the query on "Arch Supports for Flat Foot in Children" appearing in The Journal, Aug. 10, 1946, page 1254, is far too dogmatic. It would be fairer to say that there is one group of orthopedic surgeons which feels as does the expert who answered the query. It would be still fairer to say that there is another group of competent orthopedic surgeons who feel entirely differently. I am one of the latter group. I feel that a pronated weak foot in a youngster definitely requires support, as the absence of support will result in a deformity of the tarsal bones as the child develops, since the bones will grow in the malposition of pronation. I still feel that the youngster with a weak pronated foot would definitely improve with exercise. However, any one who has ever handled infants and growing children knows how difficult it is to have them do exercises throughout a day. An occasional exercise morning and night for just a few minutes is of value only in giving mother gray hair and a sense of satisfaction that she is doing something for her child.

Harold Lefkoe, M.D., Philadelphia.

FRIGIDITY

To the Editor:—As a general practitioner interested in psychosomatic medicine, I wish to add several comments to the much discussed problem of frigidity. The psychologic aspect is more important than any other factor, and for this reason both surgery and endocrine therapy have been unsuccessful. This is a common problem, and many patients seen by the general practitioner can be treated successfully by him. The average patient is reluctant to be referred to the psychiatrist or the psychoanalyst. A complete social history is obtained, with particular reference to the psychosexual development. With this the attitudes, feelings, incorrect and inadequate information and traumatic experiences are often uncovered. Then in several brief sessions of psychotherapy the patient gains insight into her problem and the frigidity disappears,

Myer Marks, M.D., Chester, Pa.

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MATERNAL WELFARE AND THE NEGRO

Chairman's Address

PHILIP F. WILLIAMS, M.D.
Philadelphia

Many types of agencies are concerned today with the problems of pregnancy. Medical, nursing, hospital, public health, educational and governmental bodies, stimulated by reviews of the vital statistics of reproduction, have interested themselves in improving maternal welfare. This term implies the full use of all facilities for the promotion of adequate maternity care. During the past decade great strides have been made in this direction.

An early educational effort by the government, the Sheppard-Towner Maternity and Infancy Act, passed by Congress in 1921 and administered by the Children's Bureau from 1922 to 1929, established the principle of grants-in-aid for federal and state cooperation in maternal welfare. The Social Security Act of 1935, which became effective in 1936, greatly expanded the educational features of the earlier act and made prenatal clinics and public health nursing and nutrition services more readily available to a larger proportion of pregnant women. Under the Sheppard-Towner Act $1,900,000 was made available to the states each year. Under the Social Security Act the annual amount is $5,820,000.

The continued provisions of the Social Security Act have been overshadowed by the wartime Emergency Maternity and Infant Care program which has provided free care for the wives and newborn infants of men in the lower pay grades of the military service. The sum allotted by Congress for this program for the fiscal year 1945 was $42,800,000.

In recent months legislative proposals have been advanced to make complete maternity care at federal expense or through compulsory health insurance available to all women electing such benefits.

During these same years the medical profession has extended maternal welfare by emphasizing better antepartum care, by stressing the value of conservatism in obstetric surgery, by aiding in the revision of hospital regulations regarding consultations, operative privileges and obstetric facilities, l [illegible] ate education and training and by [illegible] have also given instructions in maternity hygiene to their patients, the husbands and the general public. Through maternal welfare committees they have carefully reviewed individual maternal deaths and endeavored to discover and eliminate the conditions responsible for those that were deemed avoidable. Such committees have acted as advisers to local, state and federal health agencies. Some competent observers state that the reduction in maternal mortality in this country in recent years has been due largely to these activities of the medical profession; the profession assuredly has had an important part in the reduction.

Outstanding among the many individual and organized efforts in this field must also be mentioned the work of the American Committee on Maternal Welfare, the American College of Surgeons, and the American Board of Obstetrics and Gynecology. Notable, too, have been the contributions of the Maternity Center Association, the National Health Council for Mothers and Babies, the American Hospital Association and the American Public Health Association.

The results of these intensive, expensive and combined professional and lay efforts toward improving maternal welfare should be reflected in the trend of the puerperal death rate. Prior to 1933, however, assessment has been difficult; from year to year the Birth Registration Area established in 1915 expanded as states were added, and it was only in 1933 that statistics on births and deaths became available for the entire United States. Some progress was effected during these years, but even under the Sheppard-Towner Act the evidence was discouraging. In the group of states in the Birth Registration Area each year of the period 1921 to 1929, the rates for 1921 and 1929 were, respectively, 67 and 64 per 10,000 live births,[1] and the total decrease during these eight years of federal and state cooperation under the Sheppard-Towner educational program amounted to only 4.5 per cent.

In 1933, when the entire continental United States came to be included in the Birth Registration Area, the rate was 62 per 10,000 live births; in 1935 it was 58. Each year since then it has dropped progressively. In 1943, the latest year for which I have United States Bureau of Census Reports, it was 25. The decrease since 1933 amounts to 60 per cent; that during the eight years of operation under the Social Security Act amounts to 57 per cent.

This reduction must be regarded as an outstanding achievement in public health. It may be attributed to the interest and participation of professional and lay workers, the implementation of their efforts in education and maternity care by federal and state funds, the advances in obstetric practice, the newer treatments against infection and the increasing maternity hospitalization, especially in rural communities.

Although the reduction in the puerperal death rate is gratifying, careful analysis of the index shows a definite disparity between the rates for the white and the Negro mothers. Year after year the Negro puer-

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Read before the Section on Obstetrics and Gynecology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

[1] Vital Statistics, United States Bureau of the Census, and Reports of State and Municipal Bureaus of Vital Statistics.

peral death rate has been double or more than double the rate for white mothers. This situation merits serious consideration.

Negroes constitute 10 per cent of the population of the United States. They are more numerous in the South, it is true, yet their ratio to the white population in many northern communities is so high that the problems of the Negro, especially those of maternity care, are of considerable importance. In connection with this situation former Governor Jones of Louisiana wrote recently, in *Liberty* magazine, that the migration of the Negro northward due to the war and the mechanization of agriculture had been over 100,000 annually since 1940. He quoted Dr. Edwin R. Embree, president of the Julius Rosenwald Fund, an authority on the Negro, to the effect that in fifteen years the ratio of Negroes in the North and in the South may be reversed, with 9 million in the North and 4 million remaining in the South. This gigantic problem of millions of Negroes voluntarily displaced and thrust on sections unfamiliar with the peculiar problems which inevitably arise holds for the obstetrician and for others the need for much forethought and planning.

In 1943 in the United States 1 infant out of every 9 born alive was Negro. In the southern states 1 infant out of every 4 was a Negro. In New York city and Philadelphia with large and increasing Negro populations, the 1938 births to nonwhite races comprised, respectively, 7 and 16 per cent of all births; in 1944 they comprised, respectively, 9 and 18 per cent. In other northern cities which are large industrial centers the 1943 percentages varied from 4 for Boston to 16 for St. Louis. Negro births in California more than trebled from 1939 to 1944; there were 1,741 in 1939, and 5,589 in 1944.[1]

A disproportionately high maternal mortality rate is evidenced for the Negro population throughout the period of record. In 1933 the United States rate for the Negro was 100 as compared with 56 for the white. In 1935, the year before the Social Security Act became effective, the rate for the Negro race was 95, that for the white was 53. During the years of operation under this act substantial decreases occurred in the rates for both races. The 1943 rate for the Negro was 51, that for the white was 21. The decrease amounts to 46 per cent for the Negro, 60 per cent for the white. The 1943 rate for the Negro is almost two and a half times that for the white; it is the rate that prevailed for the white in 1936.[1]

The excess of the Negro rate over the white rate appears in both the North and the South; it is appreciable in every state that has a considerable number of Negro births. In Georgia and in Mississippi in 1931 the Negro puerperal death rate exceeded the white by 45 per cent; in 1943 the excess of the nonwhite over the white amounted to 74 per cent in Georgia and 100 per cent in Mississippi. In Michigan, where over 90 per cent of the nonwhite births occur in cities and largely in Detroit, the nonwhite puerperal death rate in 1943 was 159 per cent higher than the white. In New Jersey in 1943 the rate for the nonwhite was 138 per cent higher than the rate for the white.[1]

Why should the Negro puerperal death rate remain double or more than double the white rate and show, in comparison, a ten year lag in its reduction? Is it because of some inherent difference of a constitutional nature, a biologic inheritance? Are the obstetric problems of the Negro essentially unlike those of the white? Does the cause lie in the contrasting situations of economy, education or social heritage?

The racial differences of the Negro compared with the white in reaction to diseases, both as to incidence and pathology, according to Raymond Pearl,[2] are so great that they should be taken into account in planning health programs. Although, as Pearl remarked, the Negro may enjoy a greater biologic fitness than the white in some respects, in others he is apparently distinctly less well adapted to the general environment in which he must live and have his being. On the other hand, Rudolph Matas,[3] writing fifty years ago on the Surgical Peculiarities of the Negro, discounted any inherent ethnic predispositions but felt that such apparent predispositions were due to conditions of environment. As recently as this year, Eastman[4] writes that he does not consider that the Negro woman faces any especial or intrinsic hazard in maternity because of her race. He believes that if Negroes had adequate medical attention it might well turn out that there were no inherent differences between the two races.

There is a greater incidence of hypertensive disease in the Negro. It occurs three times as frequently as in the white and appears earlier in the Negro woman. Nephrosclerosis and hypertensive cardiac disease are more frequent in the Negro woman than in the Negro man or in the white race. This factor may explain, in part, the greater incidence of toxemia of pregnancy in the southern Negro. The reaction of the Negro to tuberculosis is well known. Any immunity the Negro may have developed to conditions in the South is quickly lost through migration northward, which brings about sudden and often extremely unfavorable environmental changes.

The relatively poor economic status of the Negro seriously influences the maternity situation. It favors poor hygienic surroundings, the cabin with no sanitary conveniences in the rural South and the congested housing in the northern cities, where the Negro becomes segregated in the oldest and poorest dwellings. Both as a result of economy and of ignorance the nutrition of the Negro is poor; this is frequently observed in the South, where the heavy salt pork diet may predispose to toxemias of pregnancy. The Negroes' poor nutritional intake favors lowered resistance to infection. Anemia of a nutritional type is a common characteristic of the pregnant Negro woman. Not only does she react poorly to hemorrhagic complications, but, as Bickerstaff[5] has shown, this anemia predisposes to a greater degree of puerperal morbidity. Rickets, a deficiency disease, with pelvic deformity and consequent dystocia is still common, though, according to Douglass,[4] decided improvement has occurred in recent years in Baltimore.

Syphilis, the outstanding social problem of the Negro, together with poor economic factors, is responsible for excessively high pregnancy wastage, which always implies a high maternal death rate. The stillbirth rate among Negroes is approximately double the white rate, and it is well known that Negro stillbirths are incompletely registered. The high Negro stillbirth rate is, of course, closely connected with the high maternal mortality rate of the race; it has been repeatedly shown that the risk of maternal death is much greater when the infant is stillborn than when it is born alive. The Negro has a high incidence of pelvic inflammatory disease; this, in turn, tends to an increase in the incidence and severity of puerperal infection.

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[2] Pearl, R.: Biological Factors in Negro Mortality, Human Biol. **1:** 229-249, 1929.

[3] Matas, R.: The Surgical Peculiarities of the Negro, Tr. Am. S. A. **14:** 483-610, 1896.

[4] [illegible] author.

[5] [illegible] onship Between Late Prenatal Hemoglobin [illegible] Morbidity, Am. J. Obst. & Gynec. **43:** 997-1006, 1942.

Whether or not it is dependent on a lower moral code, crowded housing, neglect of adolescent children or a psychologic basis, there is a high rate of illegitimacy in the Negro race. Illegitimacy predisposes to the interruption of pregnancy with resulting infection, to pregnancy in the very young and to a lack of what maternity care may be available, all factors known to be associated with a high mortality rate. Frequent pregnancies and extremely large families are the rule in groups with a low economic status and decidedly affect maternal mortality; the Negro is no exception to these influences. Family planning programs which are now being carried on among southern Negroes are too recent to show a measurable effect on maternal mortality.

The largely rural distribution of the Negro in the South predisposes to home delivery, with a lack of facilities to combat emergencies and with inability to obtain prenatal care: the scarcity of physicians and economic reasons result in an inferior grade of attendant at birth—the untrained midwife.

The educational and intellectual deficiencies of the Negro favor poor obstetric results. These unfavorable factors are often discouraging to those who attempt health education programs among Negroes. The white patients fare better through years of conditioning by medical attention. The Negro's reaction to disease is primitive. He delays seeking medical aid for any condition not productive of pain. Preventive medicine is practically unknown to the Negro as he is unable, for the most part, to carry over any thought from one medical problem to another. Discussing the maternal welfare program in South Carolina, Siebels[4] says "that the Negroes are contributing nothing, and that should the clinics be closed we would revert in twelve months to our former status, if the substitution for the clinic was the voluntary selection of medical supervision by the Negroes, provided this supervision was available to them."

While the Negro has little understanding of the nature and importance of maternity hygiene and care, at the same time his medical care is insufficient and inefficient. Dowling[6] points out, in an analysis of a survey of maternal mortality, that errors in judgment and technic as well as neglect on the part of the physician were 50 per cent more frequent in the care of colored mothers.

Hospital facilities for Negroes are extremely inadequate; hospitalization of many Negro obstetric patients is of an emergency character. The increase in hospital births has been more sharply pronounced for the white than for the Negro. In 1943 more than three fourths of the white but only one third of the nonwhite births occurred in hospitals. In Baltimore, according to Douglass,[4] only 85 maternity beds are available for the Negro population of over 200,000. Comparatively few Negroes have been able to enroll in voluntary hospitalization plans, and private accommodations for the financially able Negro are scarce.

Negro physicians are too few to give adequate care to the race. In 1942 the population per physician for Negroes was about five times that for all races.[7] Present day Negro medical education is unfavorable to improvement in the ratio. The lack of hospital facilities for the obstetric training of Negro physicians adds to all the other hazards of Negro maternity patients.

The relative influence of these factors which promote a high maternal mortality rate in the Negro is difficult to appraise. The authors of a recent British report on maternal mortality found that the evidence was inadequate to permit the incrimination of such conceivably influencing factors as poverty, unemployment, overcrowding and so on. Ten years ago Tandy,[8] in discussing the mortality of the Negro mother, stated: "The more favorable situation of the white race is not suggested as an optimum expectation for the Negro but rather as an early objective to be reached through improvement in environmental conditions and through health education." Underwood[4] of Mississippi writes that through proper health education and health supervision there is no reason why the Negro maternal mortality rate should not approximate the white rate. The lack of health education and adequate medical attention may well be the crux of the unfavorable position of the Negro.

The practical application of these two principles has been effectively demonstrated in Chicago by the Chicago Maternity Center and in Alabama by the Division of Maternal Health of the State Health Department in cooperation with the medical profession.

In the Chicago Maternity Center poverty has been the only prerequisite for the home delivery service; patients have received competent care under the supervision of a trained obstetrician, adequate antepartum supervision, constant medical and nursing attendance during labor and a minimum of operative interference; and good hospitals have been cooperative and available. During the first four years of this privately supported charity, according to Tucker and Benaron,[9] the mortality rate, both obstetric and nonobstetric, for the Negroes who were attended, including those referred to hospitals, was 22. This rate was less than half the rate for white, and about one third of the rate for the nonwhite in Chicago during the same period.

In Alabama, with a large rural population, maternity clinics have been set up, supervised and financed by the state. The attending clinicians are local physicians, most of whom are white, and they work under the supervision of the state obstetric consultant. The number of clinics was 120 in 1942 and 80 in 1944. In 1943 the clinic cared for 28 per cent of all the Negro maternity cases in the state. Early registration was sought to provide ample opportunity for education, elimination of infection and thorough screening to permit early and efficient hospitalization if there were complications. Most of the Negro clinic patients were delivered at home by midwives, some were delivered at home by physicians and a few received hospital care at delivery. The three years of this service, Cunningham[10] points out, have cut the state Negro maternal mortality rate in half. The clinic rate for Negroes in 1943 was 21, the nonclinic white rate 23, the nonclinic Negro rate 52.

Obstetric care has undergone an evolution in this generation, but the Negro has not participated fully in the benefits of modern obstetrics. It is not possible to have two systems of maternal welfare, there must be one all-inclusive health program Health education and adequate maternity care for the Negro are amply provided for in the proposed national health program of the American Medical Association Conservation of human life in the process of reproduction should be shared equally by all Americans The interest and activity of the medical profession can bring this about

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[6] Dowling, J. D.: Points of Interest in a Survey of Maternal Mortality, Am. J. Pub. Health **27**: 803-808, 1937.

[7] Cornely, P. B.: Distribution of Negro Physicians in the United States in 1942, J. A. M. A. **124**: 826-830 (March 25) 1944.

[8] Tandy, E. C.: Infant and Maternal Mortality Among Negroes, Publication 243, United States Department of Labor, Children's Bureau, 1937.

[9] Tucker, B. E., and Benaron, H. B.: The Maternal Mortality of the Chicago Maternity Center, Am. J. Pub. Health **27**: 33-36, 1937.

[10] Cunningham, W. A.: Maternal and Infant Mortality Rates in 1943: State of Alabama Maternity Clinic Rates, Compared with State Rates as a Whole, Am. J. Obst. & Gynec. **48**: 278-280, 1944.

2206 Locust Street

PRESENT STATUS OF GELATIN SPONGE FOR THE CONTROL OF HEMORRHAGE

With Experimental Data on Its Use for Wounds of the Great Vessels and the Heart

HILGER PERRY JENKINS, M D
EDWARD HENRY SENZ, M D
HOWARD WAYNE OWEN, M D
and
ROBERT WARREN JAMPOLIS, M D
Chicago

The properties of an absorbable sponge composed essentially of gelatin and designed primarily for hemostasis were first reported by Correll and Wise[1] Frantz referred to this material in a review on new methods of hemostasis which appeared shortly afterward[2] Subsequent reports by Pilcher and Meacham,[3] Correll, Prentice and Wise[4] and Light and Prentice[5] have established its usefulness, particularly from the standpoint of the problems of hemostasis encountered by the neurosurgeon Other hemostatic agents which had been previously developed were fibrin foam, which has been extensively used in neurosurgery as a result of the excellent work of Ingraham and Bailey[6] and others,[7] and oxidized or soluble cellulose (cellulosic acid) which has been the subject of extensive reports by Frantz and her co-workers[8] and by others[9]

Those who have used the fibrin foam and the gelatin sponge advocated soaking in a solution of thrombin on the premise that the sponge or foam acts primarily as a vehicle or matrix for the thrombin which was considered the primary factor in the hemostatic action of these substances Some workers have used thrombin with oxidized cellulose, although Frantz expressed the opinion that the best hemostatic effect of the cellulose is obtained in the dry state because of the slightly acid reaction of the material, i e, the cellulosic acid

Our interest in gelatin sponge was aroused from the standpoint of its possible use in the problems of hemostasis of the general surgeon

Studies on the absorption of the gelatin sponge in the liver, kidneys, spleen and abdominal wall have been reported[10] It was found that under favorable circumstances the sponge underwent absorption within about five weeks, although in the presence of a leukocytic response due to infection or damage of the tissue the sponge may become liquefied within a week or less

In studies on the hemostatic action of the gelatin sponge[11] it was found that it would control bleeding from wounds of the liver, kidneys and spleen without the addition of thrombin or the use of sutures

In view of the excellent hemostatic properties of the sponge which were demonstrated in these experiments, a wide range of tests was devised to evaluate its hemostatic properties under more critical conditions

TESTS ON ANIMALS[11a]

In a series of 12 animals a substantial portion of a lobe of the liver was resected[12] This produced rather copious bleeding The stump of liver was "blanketed" with a sheet of gelatin sponge and held with firm pressure for five to ten minutes This controlled the bleeding, and the sponge became adherent to the liver There was no secondary hemorrhage in this series, although 2 of the animals died from what appeared to be biliary peritonitis Studies of the healing of the stump of liver proved to be most interesting

Fibroplasia developed rapidly under the sponge and in addition invaded the interstices of the sponge It appears that the sponge gave protective cover to the healing process, as well as offering a lattice work for the growth of fibroblasts, thus giving reinforcement and structural support to the healing wound in the liver This is a rather fundamental point, as foreign substances generally retard rather than aid the normal process of wound repair.

From the Department of Surgery, the University of Chicago School of Medicine

Read before the Section on General Practice of Medicine at the Ninety Fifth Annual Session of the American Medical Association, San Francisco July 3, 1946

[1] Correll, J T, and Wise, E C Certain Properties of a New Physiologically Absorbable Sponge, Proc Soc Exper Biol & Med **58** 233 (March) 1945

[2] Frantz, V K New Methods of Hemostasis, S Clin North America **25:** 338 (April) 1945

[3] Pilcher, C, and Meacham, W F Absorbable Gelatin Sponge and Thrombin for Hemostasis in Neurosurgery Experimental and Clinical Observations, Surg, Gynec & Obst **8:** 365 (Oct) 1945

[4] Correll, J T, Prentice, H R, and Wise, E C Biologic Investigation of a New Absorbable Sponge, Surg, Gynec & Obst **81:** 585 (Nov) 1945

[5] Light, R U, and Prentice, H R Gelatin Sponge Surgical Investigation of a New Matrix Used in Conjunction with Thrombin in *Hemostasis, Arch Surg* **51:** *69 (Sept) 1945, Surgical Investigation of* a New Absorbable Sponge Derived from Gelatin for Use in Hemostasis, J Neurosurg **2:** 435 (Sept) 1945 Light, R U Hemostasis in Neurosurgery, ibid **2:** 414 (Sept) 1945

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[7] Woodhall B Fibrin Foam as a Hemostatic Agent in Rehabilitation Neurosurgery, J A M A **126·** 469 (Oct 21) 1944

[8] Frantz, V K Absorbable Cotton, Paper and Gauze (Oxidized Cellulose), Ann Surg **118:** 116 (July) 1943 Frantz, V K, Clarke H T, and Lattes, R Hemostasis with Absorbable Gauze (Oxidized Cellulose), ibid **120:** 181 (Aug) 1944 Frantz, V K and Lattes, R Oxidized Cellulose—Absorbable Gauze, J A M A **129·** 798 (Nov 17) 1945 Lattes R, and Frantz, V K Absorbable Sponge Tests, Ann Surg **121:** 894 (June) 1945

(Footnote 9 in next column)

[9] Cronkite, F P, Deaver, J M, and Lozner, E L Experiences with the Use of Thrombin With and Without Soluble Cellulose for Local Hemostasis, War Med **5:** 80 (Feb) 1944 Uihlein, A, Clagett, O T, *Osterberg, A E, and Bennett, W A Absorbable Oxidized Cellulose* with Thrombin as a Hemostatic Agent in Surgical Procedures, Surg, Gynec & Obst **80:** 470 (May) 1945 Uihlein A, Clagett, O T, and Osterberg, A E The Use of Oxidized Cellulose for Hemostasis in Surgical Procedures Preliminary Report, Proc Staff Meet Mayo Clin **20:** 29 (Jan 24) 1945 Putnam, T J The Use of Thrombin on Soluble Cellulose in Neurosurgery Preliminary Note, Ann Surg **118:** 127 (July) 1943

[10] Jenkins, H P, and Clarke, J S Gelatin Sponge, A New Hemostatic Substance Studies on Absorbability, Arch Surg **51:** 253 (Nov Dec) 1945

[11] Jenkins, H P, Janda, R, and Clarke, J S Clinical and Experimental Observations on the Use of Gelatin Sponge or Foam, Surgery **20:** 124 (July) 1946

[11a] The gelatin sponge used in this experimental and clinical study was provided in sheets measuring 3½ inches by 4¾ inches by ½ inch (8 9 cm by 12 1 cm by 1.3 cm) which had been sterilized by heat and packaged in sealed glass jars by the manufacturer These large size pieces of gelatin sponge could be compressed to a thickness of 1/16 inch (0 21 cm)

The gelatin sponge which was provided in smaller sizes measuring 2¼ inches by ¾ inch by ¼ inch (5 7 by 1 9 by 0 64 cm) was found to be too small to handle bleeding of any magnitude

[12] (*a*) Janda R Observations on the Use of Gelatin Sponge, Surgery **20:** 299 (Aug) 1946 (*b*) Jenkins, H P, and Janda, R Studies on the Use of Gelatin Sponge or Foam as a Hemostatic Agent in Experimental Liver Resections and Injuries to Large Veins Ann Surg, to be published Tr Am S A, to be published

In another series of 27 experiments[12b] in which wounds were made in the vena cava it was found that the massive hemorrhage could be controlled by a "patch" of gelatin sponge applied by pressure of the fingers for two to three minutes over the rent in the vein (figs. 1, 2, 3 and 6). When pressure was removed the patch remained adherent to the wall of the vein and controlled the bleeding completely except in 2 animals which died from uncontrolled hemorrhage.

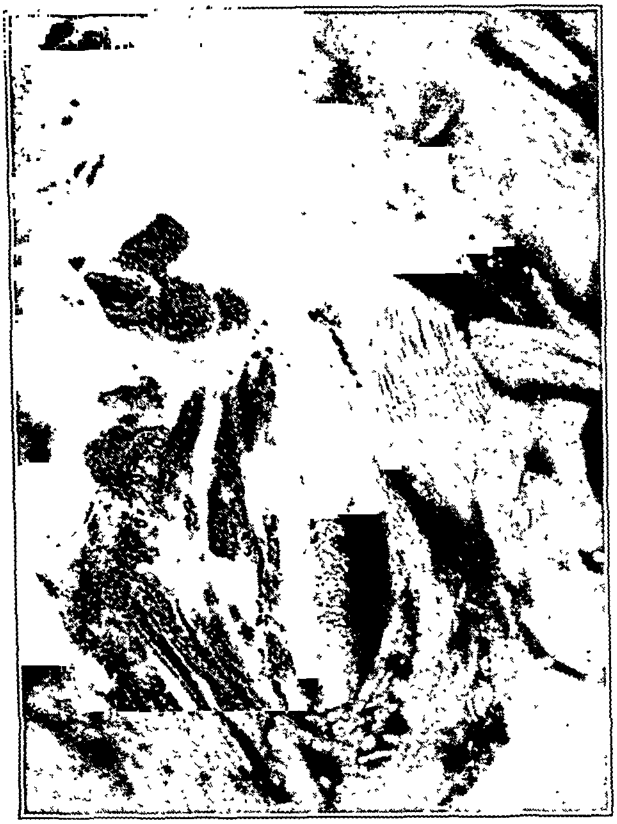

Fig. 1.—Showing hemorrhage from wound of vena cava.

In this series of animals there was secondary hemorrhage in only 1 instance in which a patch applied to the superior vena cava apparently became dislodged after the chest had been closed. The patch usually becomes sufficiently adherent within twenty to thirty minutes so that danger of dislodgment is lessened. It was generally found desirable, however, to hold the sponge in place by closing a layer of tissue such as pleura or peritoneum over the patch. After twelve hours the patch becomes rather firmly adherent to the wall of the vein. In reviewing the condition of the vein subsequently at varying periods of time it was found that the sponge firmly plugged the rent in the vein and that an endothelial layer soon covered the sponge. This endothelialization of the sponge was observed as early as four days in some instances. In a few of the specimens a small clot was observed to be adherent to the sponge, occluding the defect in the vein. Only one large mural thrombus was observed; however, in the clinical application of this phase of the work this point should be taken into consideration, and it would probably be wise to use the anticoagulants from about twelve hours to ten days. The defect in the wall of the vein was found to heal over within about two weeks by an endothelialized scar. The sponge was absorbed completely in about five weeks.

The next phase of this experimental study was to determine the hemostatic effect of gelatin sponge on arterial hemorrhage.[13] In a series of 22 dogs, incisions were made in the abdominal aorta with a scalpel after the vessel above and below had been compressed with rubber-covered clamps. In some of the experiments through and through wounds were made with the scalpel. When the clamps were released the bleeding was extensive. The clamps were reapplied, and a cuff of dry compressed gelatin sponge was wrapped about the vessel and secured in place by interrupted sutures of chromic catgut. When the clamps were again released the bleeding was completely controlled and the blood flow through the cuff restored. In five experiments there were blowouts after four to six days, in two instances due to the friability of the sponge. This technic was then modified by wrapping the cuff of sponge by a sheath of chromicized catgut and then securing the sheath by four to five interrupted chromic catgut sutures. With this technic it was possible to control hemorrhage, restore the flow of blood and prevent subsequent blowouts in 14 out of 16 animals. One blowout occurred where a plain catgut sheath was used.

A propagating thrombus is another of the hazards of any type of arterial repair, and this was observed in 1 instance.

The last phase of the experimental work has been to determine the hemostatic action of the gelatin sponge on wounds of the heart.[14] In a series of 14 dogs wounds were made with a scalpel or scissors which were often large enough to admit the finger into the ventricle. A patch of dry compressed gelatin sponge was applied over the wound and held in place by gentle pressure of the fingers synchronized with the heart beat (figs. 4, 5, 7 and 8). Bleeding was completely controlled in five

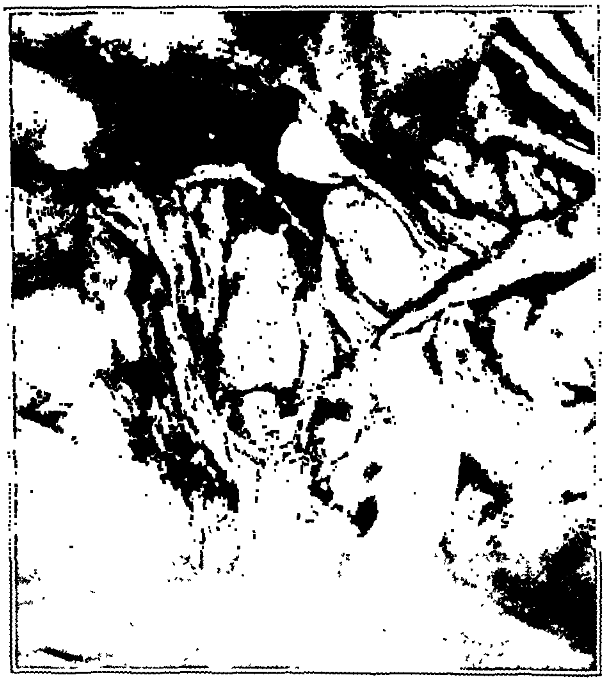

Fig. 2.—Showing control of hemorrhage by patch of gelatin sponge.

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[13] Jenkins, H. P.; Senz, E. H.; Owen, H. W., and Jampolis, R. W.: Control of Hemorrhage from Wounds of Arteries by a Gelatin Sponge "Cuff" and Chromic Catgut Sheath, a New Experimental Method, to be published.

[14] Jenkins, H. P.; Owen, H. W.; Senz, E. H., and Jampolis, R. W.: Control of Hemorrhage from Wounds of the Heart by the Gelatin Sponge "Patch" Technique, a New Experimental Method, to be published.

to ten minutes in most instances, although it required as long as thirteen minutes in 1 experiment Within twenty to thirty minutes the patch was usually quite adherent to the heart; when attempts were made to remove the patch the sponge would not come away in one piece but would tend to fragment before it could be dislodged These animals died or were killed within two to one hundred and four days No secondary hemorrhage or blowout was observed In addition, three acute experiments were performed to demonstrate the control of the hemorrhage by this patch technic. In many of the experiments the patch was removed and a fresh patch applied several times In 6 other animals ventricular fibrillation developed as soon as the pericardium was opened or the wound made

At autopsy the patch was found to be firmly adherent to the heart and slightly adherent to the overlying pericardium. There was no evidence of blood or exudate in the pericardial cavity, and no obliteration of the pericardial sac was noted.

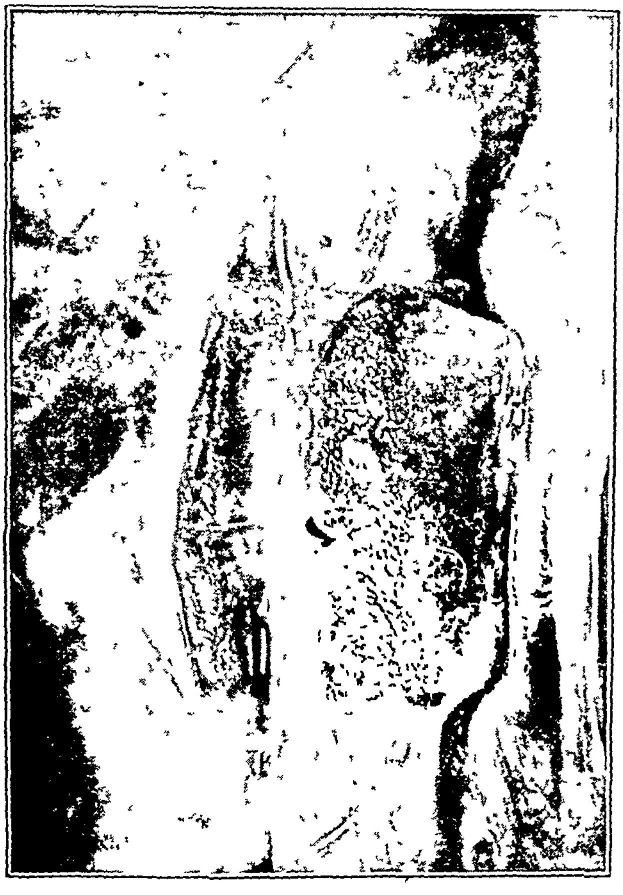

Fig 3 —Showing inferior vena cava (intrathoracic portion) thirteen days after repair of wound with patch of gelatin sponge The lungs were lightly adherent to the sponge, which was "incorporated" in the wall of the vena cava

In another series of eight experiments the bleeding from wounds of the auricles was controlled by the gelatin sponge patch technic, which required some modification from that used for controlling hemorrhage from the ventricles.[15] In most of these experiments a small portion of the auricle was excised. Two of these animals died within twenty-four hours, 1 from shock, the other from pneumothorax. The other 6 animals were killed after seven to seventy-seven days.

USE IN CLINICAL CASES AND POSSIBLE CLINICAL APPLICATIONS

In addition to these experimental tests the gelatin sponge has been used in 140 clinical cases in which there was some problem of hemostasis at operation It has been useful for control of bleeding from the under surface of the liver after cholecystectomy and from biopsy wounds of the liver After removal of the thyroid some residual bleeding in regions near the recurrent laryngeal nerves was controlled with the sponge, a method which eliminated the danger of injuring the nerves. In freeing abdominal adhesions where there may be multitudes of bleeding points, the sponge was found useful. In thoracic surgery it has been found helpful for obtaining hemostasis where thickened pleura has been excised or mediastinal tumors removed. When tissue was taken from abdominal tumors for biopsy some rather troublesome bleeding was controlled with the sponge.

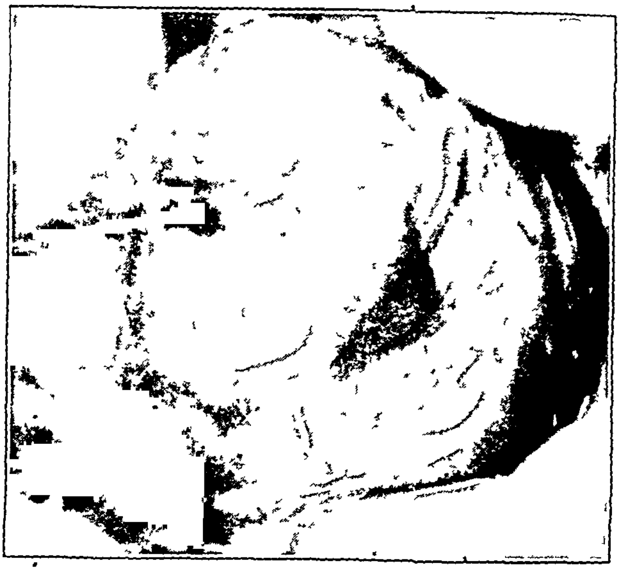

Fig 4 —Showing wound of heart (left ventricle), with scissors inserted into the wound

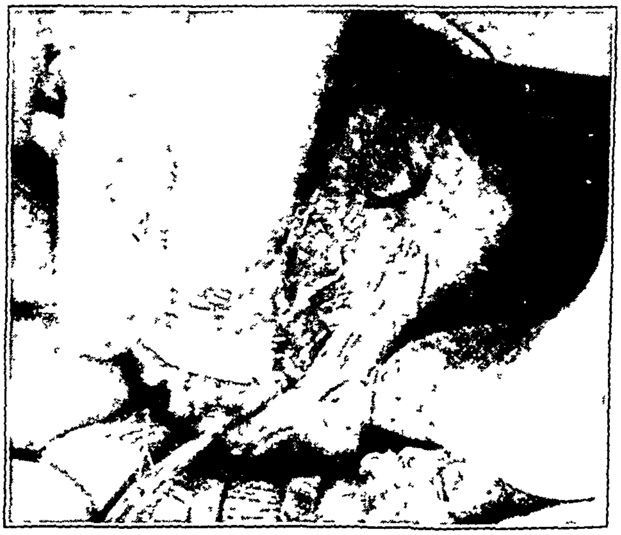

Fig 5 —Showing patch of gelatin sponge applied to wound of the heart with pressure of fingers (dry compressed sponge was used)

The gelatin sponge has also been used for control of bleeding after removal of skin grafts or granulation tissue. However, it usually becomes liquefied within one to four days under these circumstances and as a dressing for donor areas is not especially satisfactory unless the bleeding has been rather troublesome. The sponge may also be used as a pack after rectal operations, where it undergoes liquefaction within a few days and thus does not require removal. One of the more interesting uses for the gelatin sponge has been for packing the nose in cases of recurring epistaxis. It has also been found useful for packing tooth sockets after extraction, where one may sometimes encounter bleeding which is annoying.

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[15] Jampolis, R W, and Jenkins, H P.: Control of Hemorrhage from the Cardiac Auricles by Gelatin Sponge, an Experimental Study, to be published

These clinical tests represent only the relatively minor problems of hemostasis. The real problems in hemostasis in clinical surgery remain to be tested, along the lines suggested in the experimental procedures. It should be emphasized, however, that gelatin sponge or any other hemostatic agent is not a substitute for ligature or suture in the ordinary routine technics of operative surgery. The particular field of usefulness for these new materials is where ligature or suture is not adequate or feasible.

In view of the excellent hemostatic properties of the gelatin sponge as demonstrated by the experimental tests, it should be useful as a first aid dressing for surface wounds until the patient can be cared for in an adequately equipped operating room. There are numerous instances of extensive losses of blood which might be prevented with this type of first aid dressing. It is suggested that a large pad of compressed gelatin sponge be provided with a bandage to maintain pressure and to hold the sponge in place, to meet such a situation.

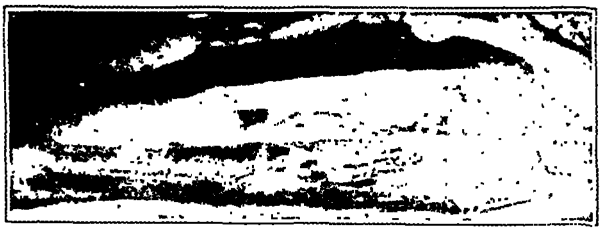

Fig. 6.—Showing vena cava forty-eight days after injury and repair with patch of gelatin sponge. Complete absorption of the patch has occurred, and the wound in the vein is healed by an endothelialized scar.

In operative surgery one of the most trying experiences which a surgeon may have is suddenly to encounter a large venous hemorrhage during the course of mobilizing an organ or tumor. There may be times when the surgeon is unable to identify the bleeding because of the lack of exposure or the magnitude of the hemorrhage, and he may be in the position of blindly applying hemostats in an attempt to control the bleeding. Under such circumstances one may damage adjacent vital structures or may be unable completely to control the hemorrhage. Gelatin sponge or the other hemostatic agents might be especially appropriate for a situation such as this. When, as is ordinarily done, gauze packs are used to control such massive venous hemorrhage it is necessary, of course, to remove the pack subsequently, and one may encounter secondary hemorrhage when this is done. When absorbable hemostatic agents are used there is no need to remove these materials subsequently, and thus the danger of secondary hemorrhage is obviated.

In the extensive dissections required in the more radical resections which are being done for abdominal malignant growths the use of the hemostatic agents may help to minimize loss of blood. Thus it may be feasible for the average well trained surgeon to perform such operations in circumstances in which there may not be unlimited amounts of whole blood available to replace the blood which may be lost in such procedures. The importance of blood transfusions when there has been extensive loss of blood during operation must not be underestimated. However, conserving blood with the aid of hemostatic agents holds much promise.

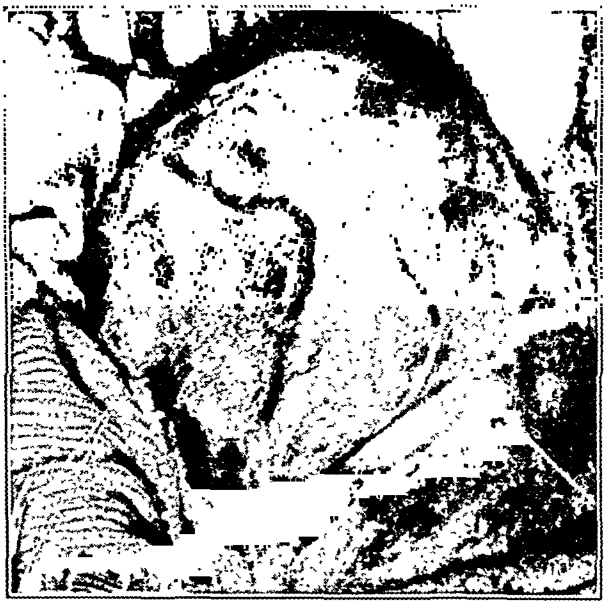

Fig. 7.—Showing patch of gelatin sponge adherent to the heart and controlling hemorrhage from the wound.

In wounds of parenchymatous organs such as the liver the gelatin sponge should be especially useful in controlling hemorrhage. In resections of tumors of the liver it may have a place as a supplement to mattress sutures. Some points in technic may have to be worked out as yet before the sponge can be used satisfactorily as the principal means of controlling hemorrhage in resections of the liver. There may be a place for a tougher and stronger spongy material which could be held in place by sutures to meet this particular problem. One of the most important points in obtaining hemostasis in the liver is an immediate firm apposition of

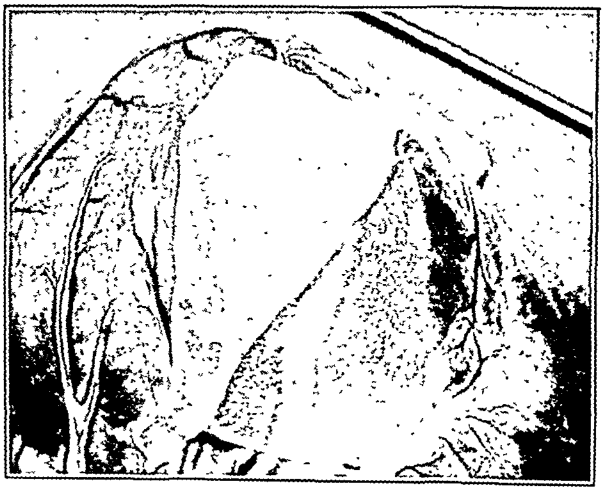

Fig. 8.—Showing heart twelve days after repair of wound of the left ventricle with patch of gelatin sponge.

the blood-soaked sponge to the bleeding surface, because the clotting of blood in the sponge before apposition is obtained negates the adhesive properties of the sponge, which are apparently due to the fibrin liberated in the clot formation. Some type of holder may have to be devised to aid in getting good apposition of the sponge to the raw bleeding surface of the liver after resection.

In operations on the bile ducts or in resections of the pancreas one may injure the portal vein. Under such circumstances it may not be feasible to perform a venisuture, and ligation, of course, would be most undesirable. In a place such as this the gelatin sponge "patch" technic may offer an alternative which would be most desirable. The neurosurgeons have used muscle, fibrin foam and gelatin sponge by the "patch" technic for controlling hemorrhages from the dural sinuses and have found this procedure indispensable to their standard technic. It is possible that the general surgeon may find this of value where there is damage to a vein which one may not choose to ligate or which may not be accessible for a satisfactory venisuture. Even if a venisuture is performed the patch of gelatin sponge may serve a useful purpose as a secondary line of defense.

In regard to wounds involving arteries where the blood flow is necessary for the viability of a limb or organ the "cuff" technic may offer some possibility for restoring vital circulation. Wherever it is feasible to perform an arterial suture it would of course be preferable, but there may be situations in which the cuff of gelatin sponge supported by a chromic catgut sheath can be utilized to maintain the arterial circulation. If arterial suture is done then the cuff and absorbable sheath may be used to supplement the suture line as a secondary line of defense against subsequent blowouts, which is of course one of the hazards of any arterial suture.

Another possible clinical application of the cuff and sheath is as a reinforcement to arterial anastomosis, which is being done in an increasing number of instances in some of the newer operations which are being developed.

In cardiac wounds the use of the sponge to stop the hemorrhage so that sutures can subsequently be placed offers one constructive point. Furthermore, a suture line can be reinforced with gelatin sponge, making it possible to tie up the sutures with less tension, thereby lessening the danger of ischemia of the muscle from tight sutures or secondary hemorrhage and subsequent tamponade from too loose a suture line. Furthermore, in small wounds, or wounds adjacent to a coronary vessel, where a suture may occlude a major branch, or wounds of the auricles, there may be a place for the gelatin sponge patch alone.

In regard to the use of gelatin sponge as a supplement or alternate to suture of traumatic wounds of the heart it would be advisable to await the evaluation of this experimental method by those who have had the widest clinical experience in this field, such as Elkin, Bigger, Blalock, Beck, Griswold, Singleton and Linder, as their work has been largely responsible for the present day method of treatment of cardiac wounds. One of the most interesting possibilities of this experimental method is that it may make intracardiac surgery more feasible, such as operations for stenosing lesions of the valves, by offering a more satisfactory means of controlling hemorrhage.

One should be extremely guarded in making clinical recommendations on the use of a new substance such as gelatin sponge or other hemostatic agents. It would be most unfortunate to have such materials misused and to have discredit brought on a valuable new agent in surgery.

There are technical points in applying the sponge which require some actual experience before one can obtain satisfactory results in controlling any severe hemorrhage. The importance of this should not be underestimated, as control of hemorrhage by the hemostatic agents may require more skill and training than is necessary to apply a hemostat adeptly or to tie a ligature. Furthermore, there are some limitations to the use of these hemostatic agents, particularly from the standpoint of the bulk of the material used. It is a fundamental principle in surgery to minimize the amount of foreign material used in a wound, and this applies to the hemostatic agents as well as to suture material or anything else. It is important, therefore, to use as small a piece and especially as thin a piece of gelatin sponge as is compatible with obtaining satisfactory hemostasis. In the presence of contamination or infection the bulk of the hemostatic agent is especially important because the gelatin sponge may become rapidly liquefied under such circumstances and may offer a culture medium which may influence the development of infection.

MODE OF ACTION OF THE GELATIN SPONGE

In regard to the mode of action of the gelatin sponge in obtaining hemostasis it would appear that the most substantial factor in the control of bleeding in this study has been the gelatin sponge itself, as nearly all the experimental and clinical observations described were made without the addition of thrombin to the sponge. Control studies using sponge rubber, Du Pont cellulose sponge and sea sponge demonstrated a hemostatic action on wounds of the vena cava and the heart which was similar to that of gelatin sponge, although it was not so satisfactory and did not adhere so firmly to the wound. The hemostatic action of thrombin is of course incontestible. The extent to which thrombin may enhance the hemostatic effect of substances such as gelatin sponge was not at all clearcut in our experience.

The clotting effect of the sponge may be due to the liberation of thromboplastin when the platelets in the blood entering the sponge become damaged by contact with the walls of the myriads of interstices, which present a rather large surface area. The thromboplastin thus liberated along with the prothrombin and calcium in the blood may then produce enough thrombin to initiate the clotting mechanism. Thus one may be dealing with a physiologic formation of thrombin in the sponge which is adequate to produce a clot by its action on the fibrinogen of the blood without the addition of prepared thrombin.

In conditions in which there is a deficiency of prothrombin or platelets it would obviously be desirable to have prepared thrombin in the sponge to obtain satisfactory hemostasis. Until such time as more data are available on the extent to which thrombin may appreciably enhance the hemostatic effect of gelatin sponge in the absence of deficiency in the normal clotting mechanism it is recommended that thrombin be used with gelatin sponge in clinical cases.

The important and fundamental aspect of this work is the spongy physical properties of the gelatin sponge, which hastens the formation of a clot when the blood enters its interstices and then gives structural support to the clot. Furthermore, this "reinforced" clot becomes adherent to the wound because of liberation of fibrin during the clotting process. In addition, there is the role of the sponge in giving protection and support to the process of wound repair by permitting fibroplasia to develop under the cover of the adherent sponge as well as into the interstices of the sponge. And finally the sponge undergoes absorption after it has served its purpose of aiding two of the most important protective mechanisms of the body, the clotting of blood and the reparative process.

It is entirely possible that other spongy substances may be developed which would have some advantage from the standpoint of stronger and tougher physical properties which would be helpful in some of the problems of hemostasis, such as for work on the liver, the arteries or the heart, and would still retain the absorptive and protective qualities found in gelatin sponge.

In view of the possibilities of the development of a number of hemostatic agents there should obviously be some attempt made to obtain standardization of the properties of absorbability and the controls of sterility which would protect the surgeon and the patient. It would be appropriate for the Council on Pharmacy and Chemistry of the American Medical Association to make some recommendations on this problem. From our studies there appears to be a place for three grades of material from the standpoint of properties of absorbability: (*a*) a type which is rapidly absorbed (one to three weeks); (*b*) a type which is absorbed in a medium length of time, such as the present type of gelatin sponge (three to six weeks), and (*c*) a type which is absorbed slowly, where there may be a greater degree of resistance to the action of leukocytes (six weeks to six months).

SUMMARY

Experimental data on the use of gelatin sponge for control of hemorrhage from the liver and from the wounds of the great vessels and the heart have been presented. Clinical observations have been made on 140 cases in which the gelatin sponge has been used for hemostasis as a supplement to ligature or suture.

CONCLUSIONS

The absorbable hemostatic agents are a contribution to the practice of medicine and especially to surgery. Gelatin sponge has been studied experimentally and clinically and found to have desirable properties from the standpoint of absorption and hemostatic action, as well as some limitations. The gelatin sponge is a valuable addition to the field of the absorbable hemostatic agents.

These materials will undoubtedly contribute to a greater degree of safety by conserving blood loss, not only in the first aid treatment of surface wounds, where hemorrhage may be the principal immediate problem, but also in operative procedures generally.

There is no place for controversy with respect to use of the hemostatic agents in place of ligature or suture when these would ordinarily suffice. The principal field of usefulness of the hemostatic agents is where ligature or suture is not adequate, feasible or desirable, or as a supplement to suture.

With the aid of hemostatic materials now available as well as with those which may yet be developed, there may be a widening of the scope of operative surgery, especially in the field of vascular and cardiac surgery and in the operative attack on malignant tumors.

ABSTRACT OF DISCUSSION

DR. VIRGINIA KNEELAND FRANTZ, New York: It has been a matter of great interest to observe the origin and development of a number of absorbable packings since the appearance of the pioneer in the field, fibrin foam, at Harvard University There are now three such substances which have been the subject of extensive clinical as well as animal experimentation They are fibrin foam, oxidized cellulose and gelatin sponge. All these materials are nonirritating and absorb completely in the tissues in varying lengths of time. With more widespread clinical trial we await the verdict of surgeons and of general practitioners, who still see a good deal of bleeding, as to the relative merits of each of these agents. The particular technics which control hemorrhage from the heart and great vessels which Dr. Jenkins presented are dramatic and somewhat terrifying He has been wisely cautious in extending the application to exactly similar technics in human surgery. There is no doubt, however, that the hemostatic absorbable pack is here to stay for the control of bleeding—often major arterial bleeding—which cannot be handled by other means, and for more radical surgical procedures than were formerly possible, and, as Dr. Jenkins pointed out, for the first aid, first treatment of the severe hemorrhage before definitive surgery can be achieved. Clearly, the experimental studies of Dr. Jenkins are designed to give the surgeon courage in the face of what could be disaster.

DR. HILGER PERRY JENKINS, Chicago: The principal thing we have to present is the fact that these new hemostatic agents, fibrin foam, oxidized cellulose and gelatin sponge, will be helpful in saving lives by conserving loss of blood. We do not know all the clinical applications as yet of the experimental studies which have been conducted. It is only by the wider use of these hemostatic agents that we may ultimately have the answer to some of these problems. Extreme care should be used in exploring the clinical value of these new materials, and it should be emphasized again that they are not designed as a substitute for ligation and suture when this would ordinarily suffice.

Heterogeneous Mesenchymal Cells.—The reticuloendothelial system, as originally conceived by Aschoff, unites a multitude of heterogeneous mesenchymal cells widely dispersed throughout the animal body according to one functional similarity—the ability to store colloidal dyes in granular form. The individual members of the system, such as the reticular and endothelial cells of lymph nodes, spleen and bone marrow, the stellate cells of the liver and the mononuclear, ameboid cells of the loose connective tissue (clasmatocytes), had been identified by histologists many years before but their biologic relationship had not been realized on morphologic grounds. Yet certain of their functional abilities such as phagocytosis of foreign material and the faculty of fiber formation had been fully recognized before and their potentialities of progressive differentiation had been conjectured at by investigations of histologists, embryologists and pathologists. While in Aschoff's original conception the storage ability of the reticuloendothelial system was singled out, subsequent investigations disclosed additional functional aspects. The fundamental feature of the system is its reactivity to a variety of stimuli which provoke cell proliferation and differentiation in contrast to other cells of mesenchymal origin which represent final developmental stages. The cells of the reticuloendothelial system of the adult organism have retained part of their embryonal potencies which can be reawakened by adequate stimulation. The main lines of differentiation are the histiocytic-macrophagic, the hematic, endothelial and fibroblastic —Klemperer, Paul: The Reticulo-Endothelial System, *Marquette Medical Review*, August 1946.

SYMPATHECTOMY FOR REFLEX SYMPATHETIC DYSTROPHY

Report of Twenty-Nine Cases

JAMES A. EVANS, M.D.
Boston

Reflex sympathetic dystrophy or causalgia is a painful syndrome usually occurring after trauma to a limb, characterized by its own peculiar type of burning, diffuse pain, trigger points and manifestations of sympathetic stimulation such as, subjectively, a cold or hot limb and, objectively, rubor, pallor, or both, and swelling. There is often atrophy of the bone, characteristically mottled owing to spasm of the nutrient arteries, and sometimes atrophy of the skin and muscle. There may even be immobility of a joint, scleroderma and Dupuytren's contracture.

An attractive theory of the mechanism of this pain is adopted from De Nó[1] by Livingston[2] in his monograph on "Pain Mechanisms." I have slightly modified this conception in figure 1. A prolonged bombardment of pain impulses sets up a vicious circle of reflexes spreading through a pool of many neuron connections upward, downward and even across the spinal cord, and perhaps reaching as high as the thalamus itself. Because of the summation principle of nervous impulses and of the "facilitation" of conductivity within the spinal cord as described by Porter and Taylor,[3] there is kept alive within such a pool a constant circling of activity across the synapses involved. Some of these synapses include the sympathetic motor neuron cells in the lateral horn, controlling vasomotor tone and the sweat glands. Spasm in the arteriolar and venule end of the capillary loops raises filtration pressure, and edema and swelling result. Cyanosis and anoxemia increase capillary permeability and filtration, further augmenting edema. Other synapses involved may be the anterior motor horn cells, giving rise to cramps and spasms of the skeletal muscles. Augmented stimuli to pain also flow out of the pool, traveling up the thalamic tract. Depending on the extent of the pool, the phenomena of pain and sympathetic disturbances are observed a long distance from the injured area of the body and occasionally even spread to the contralateral side.

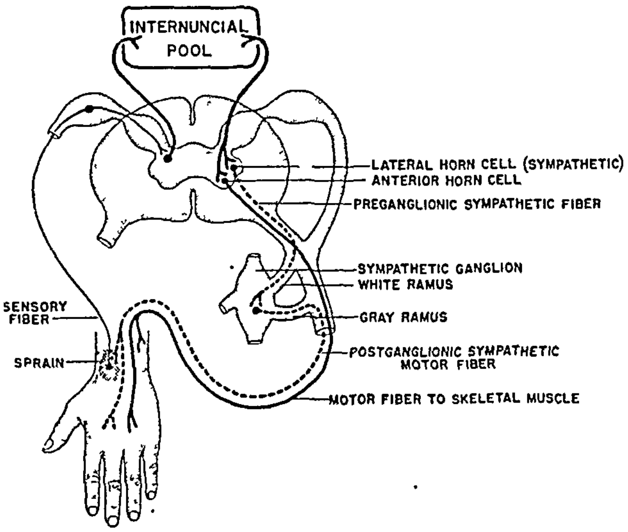
INTERNUNCIAL POOL
LATERAL HORN CELL (SYMPATHETIC)
ANTERIOR HORN CELL
PREGANGLIONIC SYMPATHETIC FIBER
SYMPATHETIC GANGLION
WHITE RAMUS
SENSORY FIBER
GRAY RAMUS
SPRAIN
POSTGANGLIONIC SYMPATHETIC MOTOR FIBER
MOTOR FIBER TO SKELETAL MUSCLE

Fig. 1.—Diagram of de Nó's theory of the internuncial pool. (Adapted from de Nó.[1])

De Takats[4] has recently reviewed 54 cases of causalgic states, in which he recognizes three sensory levels, peripheral, spinal and cortical, based on lesions of the first, second and third neurons, and advocates direct treatment to the affected neuron. With few exceptions my colleagues and I have employed therapeutic attack on the second neuron, namely the sympathetic pathway, either by sympathetic nerve block with metycaine hydrochloride or by sympathectomy. It is our conviction that the majority of these patients can be relieved by these two methods of attack. Treatment of the trigger points alone is not satisfactory in our experience in dealing with severe causalgic states and has been used chiefly as an adjunct to sympathetic nerve block with metycaine hydrochloride and sympathectomy.

In a recent review of 57 patients with reflex sympathetic dystrophy at the Lahey Clinic, 12 were treated by sympathetic nerve block alone, in 11 of whom there was satisfactory to complete relief. Twenty-nine others submitted to sympathectomy after sympathetic nerve block with procaine hydrochloride demonstrated only temporary relief in all but 2. It is important to note that these 2 patients who received no relief of pain from sympathetic nerve block were not relieved of their pain after sympathectomy, although sweating, rubor, pallor and swelling disappeared.

We have resorted to sympathectomy in many of these patients after trying one block, rather than waiting for results from a series of blocks and injections into trigger points because of the severity of most of these patients' syndromes, their prolonged suffering, the distance from which they came to us, for quicker rehabilitation to normal economic status and because in the hands of Dr. Poppen,[5] of our neurosurgical staff, sympathectomy is an operation attended by no risk of mortality and only two weeks' hospitalization.

The results of sympathectomy with regard to pain are given in table 1. Ten patients had complete relief of pain for follow-up periods of one month to two years. One patient who was followed up for less than one month had complete relief. Eleven patients had 50 to 90 per cent relief for periods ranging from one month to two and one-fourth years. Seven patients had no, or but little, relief of pain.

A review of the 7 failures (table 2) seems of more value in the study of this syndrome than a detailed report of the success of what is now accepted as a standard treatment. Two glaring pitfalls appear: (1) 2 patients who were not relieved of pain on block were not helped whatsoever by sympathectomy, at least with regard to their pain; (2) 2 patients not included in this series did not have sympathectomy performed because false blocks temporarily relieved their pain after true blocks had produced complete, dramatic relief.

From the Department of Internal Medicine, The Lahey Clinic.

Read before the Section on Nervous and Mental Diseases at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

[1] Lorente de Nó, R.: Analysis of the Activity of the Chains of Internuncial Neurons, J. Neurophysiol. **1**: 207-244 (May) 1938.

[2] Livingston, W. K.: Pain Mechanisms: A Physiological Interpretation of Causalgia and Its Related States, New York, The Macmillan Company, 1943.

[3] Porter, E. L., and Taylor, A. N.: Facilitation of Flexion Reflex in Relation to Pain After Nerve Injuries (Causalgia), J. Neurophysiol. **8**: 289-295 (Sept.) 1945.

[4] de Takats, G.: Causalgia States in Peace and War, J. A. M. A. **128**: 699-704 (July 7) 1945.

[5] Five of these patients were operated on by Dr. Ralph Adams of the general surgical staff.

The psychosomatic background of patients with reflex sympathetic dystrophy is like that of patients with Raynaud's disease and hysteria, and "litigation neurosis" must be carefully appraised in these cases with the help of the psychiatrist.

One of the 2 patients who did not receive relief from either block or sympathectomy had sustained a fracture of the right ankle three years previously. Her pain was severe, of the causalgia type; trigger points, rubor and swelling were present. For three months following sympathectomy she was considerably better and was able to abandon crutches. At a follow-up examination nine months after operation, however, her pain was as severe as ever, although a good effect of the sympathectomy was evident and swelling was no longer present. Electric skin resistance test showed regeneration of sympathetic nerves, which must have recurred within three months. Parenthetically, a study by Dr. Richter[6] at the Lahey Clinic of such sympathetic regeneration after sympathectomy for hypertension has been most illuminating and constitutes a challenge to the present technic of sympathectomy. On this patient it was necessary to perform neurectomy of the distal peroneal and sural nerves, which finally gave her relief of pain. We felt that this procedure was preferable to attack on the spinal neuron (by cordotomy).

The second patient who received no relief of causalgic pain one year after either block or sympathectomy had suffered a laceration of the hand and had two repair operations one year previously. She had severe causalgic pain. Trigger points, pallor, sweating and atrophy of muscle and bone were present. It was decided that in a patient with her psychosomatic background a third resection of the scar on the wrist with necessary pedicle graft would be inadvisable. Previous local operations had only aggravated her pain, a fact emphasized by Livingston. Since her case is still in litigation, we have advised immediate settlement and have seriously proposed a visit to a well known religious shrine before such radical measures as attack on the spinal neuron (thalamic tract resection) or at the cerebral level (lobotomy or cortical resection) are considered.

The third patient who had no relief following sympathectomy had his operation done elsewhere, and a diagnostic block, advised by us, was not carried out first.

A fourth patient we feel needs scalenectomy for further relief.

The fifth patient who received absolutely no relief from sympathectomy suffered a peculiar pain in the left arm, axilla and left side of the chest, often provoked by effort but more often coming on while he was lying down. Successful treatment of subacromial bursitis on the left side gave him no permanent relief. Three paravertebral sympathetic nerve blocks with metycaine hydrochloride and two trigger blocks gave him complete but temporary relief. Upper thoracic sympathectomy on the left side afforded him relief for only two or three weeks, and two months later he reported full return of angina of effort.

For 1 of 2 patients who received only about 25 per cent relief following sympathectomy an additional exploration of the radial nerve is advised, and the other needs continued physical therapy for pronated feet.

Two unusual cases of reflex sympathetic dystrophy in which there was successful relief of symptoms by sympathectomy are reported.

REPORT OF CASES

Case 1.—A man, aged 64 was admitted to the New England Deaconess Hospital Aug. 18, 1945, with pain and swelling of the left hand and forearm of five months' duration. A year before admittance itching and discomfort of his nose had developed, with several small ulcers inside the nose. When these failed to heal, a Wassermann test was made, results of which were reported to be "questionably positive." He was then given an injection of a bismuth compound into the left cubital vein. As the injection was being given, the patient jumped and some of the bismuth compound was injected outside the vein. Shortly thereafter a lump about 4 by 8 cm. formed on the arm. Two weeks later a spot on the left thumb became painful, tender, red to purple and hot. This spread to involve the entire hand and wrist. At times the fingers became pale and cold, and the nail beds became white. A rash was present for three weeks on the dorsum of the left hand.

Examination showed the wrist and fingers of the left hand to be slightly swollen. The skin was smooth, pink and atrophic. There were loss of wrinkles and pitted nails. Ulnar deviation of the wrist was present. The metatarsal phalangeal joints were slightly flexed. The interphalangeal joints of the four fingers were immovable. There was atrophy of the left shoulder girdle. Pigmentation of the skin, with scaling, was noted over the left pectoral and left supraclavicular regions. There was partial immobility of the left shoulder, especially with respect to external rotation. A diagnosis was made of reflex sympathetic dystrophy, with secondary atrophy of the bone, muscles and joints and immobility of the finger joints.

Table 1.—*Results of Sympathectomy on Pain in Twenty-Nine Patients*

100% relief 1 month to 2 years	10
100% relief; follow-up less than 1 month	1
90-50% relief 1 month to 2¼ years	11
25-0% relief more than 1 month	7

Table 2.—*Analysis of Poor Results from Sympathectomy*

No relief		5
Diagnostic block gave no relief	2	
Diagnostic block not done at first	1	
Scalenectomy needed	1	
Angina of effort returned	1	
25 per cent relief only		2
Exploration of radial nerve advised	1	
Continued physical therapy for pronated feet advised	1	

Sympathetic block of the cervical chain on the left side was carried out on August 22, with the following results: 1. Shortly after the block, the skin of the left hand became redder. One hour later, when the hand was being held in the dependent position, it became cyanotic. 2. There was definitely decreased pain in the fingers, hand and wrist, with abolition of pain at the trigger point at the base of the left thumb. 3. There was increased passive mobility of all the finger joints and the wrist. 4. Cutaneous temperature readings taken on the dorsum of the hand, thumb and forefinger showed a definite increase, a total rise in one hour of 6.3 F. Because of long disuse of the extremity, the patient had a "frozen left shoulder." The orthopedist manipulated the shoulder under local anesthesia, breaking down fibrous adhesions. Four days later cervical sympathectomy on the left side was done by the anterior approach. On the fourth postoperative day bronchial pneumonia developed, which subsided on sulfathiazole therapy. *On discharge the patient was given instructions to* use melted paraffin to the hand and given directions as to special exercises.

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[6] Richter, C. P.: Personal communication to the author.

Nine months after discharge some scleroderma was still present over the second and third fingers and palmar contraction persisted. The left shoulder had full motion. The fingers were more mobile, all pain had disappeared, and there was no more atrophy of the muscles of the chest or shoulder and the pigmentation and scaling of the skin over the left pectoral region were entirely gone. Recalcification had occurred in the humerus and bones of the hand and wrist (fig. 2).

Case 2.—A woman aged 33 entered the New England Baptist Hospital on May 10, 1945, complaining of excruciating pain in the right arm, shoulder and breast, of five years' duration. Six weeks before the onset of this pain she had fallen on the right elbow, and the roentgenologist reported that she had sustained a "chip fracture of the olecranon process." The trouble began as a painful swelling of the right forearm, diagnosed as neuritis. The tonsils and appendix were removed as possible foci of infection, without relief. Next, the arm itself was explored and a biopsy specimen was taken. The pathologic report was periarteritis nodosa

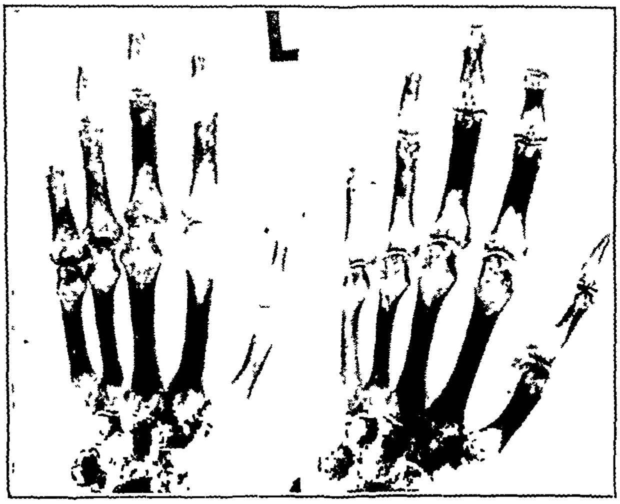

Fig. 2 (case 1).—Roentgenograms of hands; left, preoperative; right, nine months after sympathectomy, showing recalcification of the bones of the hands.

In 1942 a nerve block proved ineffective. In 1943 relief was obtained after a scalenectomy, but there was a return of symptoms in 1944, attended by severe epistaxis.

Examination revealed a Raynaud-like syndrome, with trigger points over the scar on the right arm, the olecranon process, the posterior and medial surface of the upper part of the forearm, the back of the right shoulder and the right posterior aspect of the neck about the level of the second and third cervical vertebrae. Another trigger point was present in the lateral second interspace on the right. Exposure to cold produced whiteness of the hand and forearm, followed by blueness. Extreme cold caused complete numbness of the right little finger and proximal interphalangeal joint, the latter becoming black in color. The patient stated that when the pain started the right shoulder, breast and arm felt cold, became pale and then swelled, after which the hand became white and then blue. This phenomenon was observed during the examination. There was a palpable difference in temperature of the upper part of the arms. Sweating of the right axilla and hand was noted. There was atrophy of the tips of the fingers in both hands, more marked on the right, with tapering especially of the tip of the right little finger. The right radial pulse during a paroxysm of pain was barely perceptible. It was thought that her episodes of pain in the left arm might be the contralateral effect sometimes seen in causalgia.

On May 14, 1945, the patient was put out on a porch, where the air was cooler. When she was turned on her left side and the right arm and shoulder were exposed, the arm became painful and was mottled and cyanotic from the shoulder down to and including the hand. A paravertebral block with metycaine hydrochloride was done of the seventh cervical and first and second thoracic segments. Almost immediately after the metycaine hydrochloride was injected the patient said that her arm felt warmer and the pain was diminished. Fifteen minutes after the injection was completed, the arm was pink and warm. She said there was no pain whatsoever by this time. The trigger areas had disappeared.

With this evidence thoracic sympathectomy on the right side was performed, including the thoracic second and third sympathetic ganglions. After sympathectomy, the pain on the right disappeared and the flushing and sweating phenomena abated.

About a week after sympathectomy on the right side the patient began to complain bitterly of similar symptoms on the left side. A block of the upper thoracic sympathetic nerves caused temporary disappearance of this pain. A thoracic sympathectomy was therefore done on the left side, including the second and third thoracic segments. The patient was discharged on the twenty-fifth hospital day asymptomatic.

Four months after discharge from the hospital, however, the pain and sweating returned in an area lower on her chest than the previous symptoms. Sympathectomy was now extended in two stages down through the second lumbar segment. When the patient was discharged from the hospital two weeks later all causalgic pain had disappeared.

SUMMARY AND CONCLUSIONS

A theory of the mechanism of pain in reflex sympathetic dystrophy is presented.

Sympathectomy was performed on 29 of 57 consecutive patients with reflex sympathetic dystrophy seen in the last five years.

Eleven of the 57 patients received adequate relief by one or more sympathetic nerve blocks with procaine hydrochloride, sometimes reenforced by trigger block.

Temporary relief by sympathetic nerve block with procaine hydrochloride indicates the need for sympathectomy.

Failure to obtain relief by sympathetic nerve block with procaine hydrochloride makes relief by sympathectomy unlikely, even if other symptoms of sympathetic dystrophy besides pain are objectively present.

Twenty-two of 29 patients (76 per cent) on whom sympathectomy was performed for reflex sympathetic dystrophy obtained satisfactory to complete relief of pain. Two more patients received only slight relief of pain and need further surgical or physical therapeutic measures for complete relief, measures which we have found are more likely to succeed when the sympathetic pathway is cut.

Sympathectomy should be done, therefore, before necessary local surgical procedures or painful physical therapeutic measures are attempted.

Five patients (17 per cent) received no relief whatsoever. Two of these patients had received no previous relief from sympathetic nerve block with procaine hydrochloride and this fact would seem to preclude the success of sympathectomy. Of the remaining 3 patients, 1 did not have a previous diagnostic block, 1 needs scalenectomy and the last has complicating angina of effort.

The possibility of rapid regeneration of sympathetic nerves militates against permanent good results of sympathectomy in some patients.

ABSTRACT OF DISCUSSION

Dr. Geza de Takats, Chicago: One can hardly overemphasize the importance of Dr. Evans's contribution. The syndrome of reflex dystrophy or, what is a broader term, the causalgic state, is far more frequent than is ordinarily supposed. It not only appears after comparatively mild, blunt trauma affecting the terminal parts of the extremities, but it plays a role in the symptomatology of such disjointed conditions as rheumatoid arthritis, diabetic neuropathy, adhesion pains after laparotomies and many other lesions in which there exists a chronic continuous stimulation of sensory pathways which produces chronic sensory, vasomotor and motor phenomena. I agree with Dr. Evans that the early effective block of the sympathetic pathways is the most satisfactory method of treatment. His careful analysis of failures reemphasizes the importance of never advocating sympathectomy unless relief from pain has been obtained by procaine block of the sympathetics and secondly that incomplete sympathectomies may result in failure or recurrence. It is now sufficiently clear, particularly from army experience, that sympathectomy for causalgia of the lower extremities must be so extensive that it may necessitate the resection of the eleventh and twelfth thoracic ganglions along with the first and second lumbar ganglions. No such difficulty seems to be encountered in the upper extremities, where resection of the second and third ganglions with root section of the second and third intercostal nerves is sufficient. That long-lasting causalgias have difficulty because of stiff joints, short tendons and atrophic muscles simply reemphasizes the importance of early recognition and treatment of such states. Compensation neurosis and hysteria are the two great hurdles in this field. One must insist on early settlement, and it is doubtful whether any such patient should be treated before settlement is reached. The value of sham injections is also obvious; the dramatic long-lasting relief from procaine injections must be analyzed with the help of injecting isotonic solution of sodium chloride through procaine wheals; recently 2 patients received relief from this procedure, thereby dissuading me from doing a sympathectomy. A word should be said about the mechanism of relief following sympathectomy. If this were a reflex sympathetic dystrophy, as I suggested in 1937, sympathectomy would cut the efferent arc of the reflex; but many observations which have accumulated since then make me suspect that this is a true antidromic, sensory nerve stimulation which is certainly unwisely treated by local excision and which responds to sympathectomy because section of the sympathetic efferents diminishes the number of impulses reaching the injured, irritable noninsulated sensory neuron. The sympathectomized extremity, even in a noncausalgic limb, has a raised threshold for pain, a fact which explains many a puzzle of the so-called extrasensory auxiliary pathways for pain.

Captain W. K. Livingston (MC), U.S.N.R.: Dr. Evans is to be congratulated. Out of 29 cases a ganglionectomy failed to afford a substantial or complete relief in only 7 cases. I would consider these results exceptionally good. Dr. Evans is correct in stating that when a preliminary procaine block of the sympathetics fails to afford temporary relief it is reasonable to assume that a ganglionectomy will probably fail. I would add the fact that even when the procaine block affords temporary relief the ganglionectomy may fail to confer a satisfactory result. In my opinion there are three reasons why this should be so: 1. The phase of active vasodilatation which follows immediately after a block or a ganglionectomy does not persist for long, and although relief may be obtained during this primary phase, the pain may recur when the vessels regain some tone. 2. Sympathetic nerves have a remarkable ability to regenerate. I have had the disappointing experience of seeing pain return a few weeks after ganglionectomy and have been able to demonstrate that within two or three months sympathetic fibers have successfully bridged a considerable anatomic gap. 3. These so-called sympathetic dystrophies begin as a result of irritation at some focal or "trigger point." A sympathetic ganglionectomy does not remove this source of irritation, and not infrequently the pain and many of the associated dystrophic phenomena will recur even in the absence of the sympathetic component. In my opinion the most significant feature of this paper is the fact that 11 of 12 patients treated with procaine block alone were completely cured of their pain. These 11 patients represent almost 20 per cent of this whole series. The fact that procaine block gives a satisfactory result without the need to resort to a surgical excision indicates to me that the syndrome represents a disturbed physiology which the injection acts in some mysterious manner to correct. I am always in favor of trying repeated procaine block of the sympathetics before resorting to the use of alcohol or a surgical excision of the ganglions for three reasons: 1. I hesitate to excise sympathetic ganglions which in their normal state must serve useful functions, some of which functions we may not yet understand. 2. When a surgeon excises the sympathetic chain he has removed the point of attack at which the syndrome is most vulnerable. 3. Since I believe that this is a disturbance of physiology, I would prefer to treat it with physiologic methods rather than surgical excisions. This paper emphasizes two points which are of great importance to the clinician who undertakes to treat painful dystrophies. One of these is that the sympathetic nerves play an important part in sustaining the dystrophy and represent the most logical point for surgical attack. The second point is equally obvious in this paper, that is, a sympathetic ganglionectomy is not a cure-all for painful dystrophies.

Dr. James A. Evans, Boston: I thank Dr. de Takats and Dr. Livingston for so ably discussing this difficult problem. I do not want to leave the impression that sympathectomy is a cure-all for this syndrome. It is a very difficult kind of case to handle in many instances. One must not lose sight of the psychosomatic feature of these cases, and fake blocks are often necessary to bring this out. Litigation neurosis enters into this again and again, as has been pointed out. I also want to state that a series of blocks will cure many of these patients without having to resort to the more radical sympathectomy.

THE MALARIA PROBLEM TODAY

Influence of Wartime Experience and Research

CAPTAIN JAMES J. SAPERO
Medical Corps, United States Navy

In dealing with present day problems of malaria, attention in this paper will be centered on potential benefits forthcoming as a result of wartime experience and wartime research. From this experience and research, important advances in the field of malariology have followed. In particular, they have contributed to improved methods in the treatment of malaria and to new approaches in regard to prevention.

CLINICAL MALARIA

Army and Navy statistics[1] for World War II reveal a total of 572,950 reported admissions for malaria. Actually, it is probable that, had complete reporting been possible, the total would have more nearly approximated a million admissions. Whatever the exact figure, clinical experience on an unprecedented scale was gained, and as a result many interesting and exceedingly important developments took place in the field of clinical malaria.

Substitution of Quinacrine Hydrochloride for Quinine.—A development of foremost importance is that during World War II quinacrine hydrochloride displaced quinine from its agelong position of preeminence.

Malaria and Epidemic Disease Control Officer, South Pacific Area (1942-1944) and Pacific Ocean Areas (1944-1945).

Read in the General Scientific Meetings at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 2, 1946.

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[1] Sapero, J. J.: Tropical Diseases in World War II Returnees, to be published.

As a result, never again will it be necessary to face the serious problem of an irreplaceable shortage of quinine such as that which occurred early in the war when most of the cinchona plantations fell into the hands of the enemy.

Although the drug had been known for some years, even before the outbreak of the war, it had never come into general use. Instead, almost full reliance had been placed on quinine. The relatively small number of physicians who had had experience with quinacrine hydrochloride were not certain concerning either its therapeutic capabilities or its toxic potentialities.

As quinine became more and more scarce during the war, physicians found themselves forced to use quinacrine hydrochloride. It became apparent soon that the clinical response to this drug was equivalent to that of quinine. In regard to the toxicity of quinacrine hydrochloride, overseas experience demonstrated, contrary to previously expressed opinions, that the drug had an exceptionally low toxic factor. It is true that initial gastrointestinal intolerance occurred, but this shortcoming was largely corrected by adjusting the initial dosage. The claims that hepatitis, psychoses and other severe toxic manifestations would occur were not substantiated. It seems probable, in fact, that the exceedingly infrequent serious toxic manifestations which did take place actually did so less commonly than would have been the case had quinine been used on a like scale.

Incurability of Pacific Malaria Due to Plasmodium Vivax.—With the establishment of quinacrine hydrochloride as an efficient and safe antimalarial, the next problem which arose was the failure of either quinine or the other drug to cure the South Pacific strain of malaria due to Plasmodium vivax. After treatment of the primary attack, this strain of malaria almost inevitably relapsed, did so promptly and continued to relapse with discouraging persistency, irrespective of treatment. This was unlike clinical experience with malaria due to P. vivax in the United States. It was characteristic of the primary attack of the American strain to respond promptly to treatment. There would then follow a latent period of some seven to eleven months before relapses were to be expected. Further, the average duration of infection was shorter. American infections caused by P. vivax terminated usually within a period of eighteen months; South Pacific infections, in contrast, continued frequently on into the third year.

The Search for a Curative Drug.—The exceedingly discouraging experience in the attempt to cure South Pacific malaria due to P. vivax led to an unparalleled program of research, both in the United States and elsewhere, in an attempt to synthesize a drug capable of curative effect. As a result, a large series of chemicals were explored and subjected to clinical tests. One of these, originally referred to as SN-7618 and now officially known as chloroquine,[2] has reached the stage of practical clinical application. This drug, against well standardized strains of Plasmodium falciparum and P. vivax, has shown an activity approximately three times that of quinacrine hydrochloride. To date it has presented little evidence of toxicity. It does not cause the gastrointestinal intolerance so frequently encountered in using quinacrine, nor does it stain the skin. Furthermore, it rapidly controls clinical symptoms in both the P. vivax and the P. falciparum types of malaria and is curative in the latter. In benign tertian infections it is not curative but tends to prolong the intervals between relapses beyond that observed with either quinacrine hydrochloride or quinine.

Although it appears that chloroquine may be superior to both quinine and quinacrine as an antimalarial, its failure to cure malaria caused by P. vivax has necessitated further investigation in the hope that a curative drug may be found. In the course of such investigations, it has been found that pamaquine, as had been previously claimed, is capable of curing malaria due to P. vivax. Unfortunately, the curative dosage is close to the limit of tolerance and too toxic to serve as an answer to the present need for a curative drug.

Pentaquine (SN-13276), which is closely related to pamaquine, has been recently explored and found to be approximately equal in activity and only half as toxic. Although it represents a promising lead, further search is being made, as there is a need for a drug of even less toxicity. Much publicity recently has been given to Paludrine, a recent product of British investigation. This antimalarial has a chemical formula (N_1-p-chlorophenyl-N_5-isopropyl biguanide) which differs from that of any drug so far tested. From present indications, however, it will not cure benign tertian malaria and thus from a practical point of view does not seem to be superior to chloroquine.

New Concepts of the Parasitic Cycle in the Human Host.—The confusion which followed when South Pacific infections caused by P. vivax failed to respond to therapy in a manner similar to that of the American strain can readily be realized. It is now known that this confusion was largely unnecessary. It was a result of improper concepts which for years have been passed along in the general teaching in regard to malaria. The cycle of the parasite in the human host has been generally taught to be a simple parasitic invasion of red cells, taking place shortly after mosquito inoculation of sporozoites. Thereafter, almost total emphasis has been placed on the periodic, cyclic development of the parasite in the red blood cells. The concept, in regard to treatment, has further postulated that if drugs are given in adequate amounts and for a sufficient length of time, the parasites in the red cells will be destroyed and the infection cured.

With such a version, the tendency is to ascribe therapeutic failure or success directly to the precise method of treatment with a drug. Thus, in the case of the South Pacific strain, relapses and persistency of infections were thought to be essentially an expression of the failure to use adequate dosage or failure to prolong therapy sufficiently. This type of thinking during the war led clinicians to attempt almost every conceivable modification in treatment in the hope of obtaining curative results. Such attempts, nevertheless, even with inordinately large amounts of drug used over prolonged periods failed appreciably to modify the course of the disease.

What then is wrong with this concept? It is simply that the cycle of the parasite in the human host is almost certainly far more complicated than the simple version on which clinicians in the past have relied. The modern view emphasizes that after the inoculation of sporozoites, invasion of endothelial cells or other fixed tissue cells takes place. Within these cells it is thought likely that the parasites undergo a distinct cycle of development before they are discharged into the blood stream, there to begin the so-called erythrocytic cycle.

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[2] Activity of a New Antimalarial Agent, Chloroquine (SN-7618), Board for the Coordination of Malarial Studies, J. A. M. A. **130:** 1069 (April 20) 1946.

An essential part of this modern version is the postulate that persistency of infection and malarial relapse are closely linked with the cyclic development of parasites in the fixed tissue stage. Thus, the essential mechanism of relapse is conceived to result from periodic discharges of tissue forms into the blood stream. The persistency of an infection, on the other hand, is an expression of the length of time during which the development in fixed tissues continues. If this is true, it is clear why the P. falciparum and the P. vivax types of malaria are so different both in regard to the rate of relapse and the length of infection. A short period of development in the fixed tissue stage plus complete expulsion of all the parasites would lead to a short term infection without relapse. This, indeed, is characteristic of malaria due to P. falciparum. Conversely, a prolonged period of fixed tissue development with repeated partial expulsion of parasites would lead to a relapsing disease, and to its termination only when all the parasites were expelled. This, in general, characterizes infections due to P. vivax. Finally, if fixed tissue development differs in various strains of one species, different clinical patterns will follow. Such differences are exhibited by South Pacific and American strains of P. vivax and on the basis of this concept become readily understandable.

A most significant corollary to the modern concept is that which relates to therapy. Antimalarial drugs act principally, and usually almost exclusively, either on forms of the fixed tissue stage or on parasites in the erythrocytic phase. For example, quinine, quinacrine hydrochloride and chloroquine are known to act on the latter. Pamaquine, Paludrine and pentaquine act principally on the fixed tissue forms. With this knowledge it can readily be seen why quinacrine hydrochloride, which belongs to the former group of drugs, fails to cure benign tertian malaria. It can eradicate parasites in the red cells, but if relapse is a function of the fixed tissue phase, on which the drug is without effect, cure cannot be obtained. In contrast, it becomes evident why such a drug as pamaquine is curative, since the drug is capable of destroying fixed tissue forms and thereby eliminates relapses.

Unfortunately, conclusive evidence of a fixed tissue stage in man has yet to be demonstrated. There is, nevertheless, much to support the postulation of its existence. Such a stage has already been demonstrated by Huff[3] and others in several types of avian malaria. Recently Fairley[4] has shown in transfusion experiments in human volunteers that sporozoites disappear from the blood stream within thirty minutes after mosquito inoculation. On the seventh day in infections due to P. vivax and on the ninth day in those caused by P. falciparum he found that the parasites reappear in the circulation with remarkable regularity. The preciseness with which the parasites reappear strongly indicates that in some fixed tissue of the body a uniform, periodic cycle of development is taking place. Such evidence as this, plus the actual demonstration of an exoerythrocytic stage in birds, leaves little doubt that final proof of a similar stage in man will be forthcoming.

Despite the fact that the modern version of a preerythrocytic cycle of parasitic activity in the human host is as yet unproved, the experience of war years virtually forces its general acceptance. It explains differences in species and in strains and peculiarities of therapeutic response which formerly were left unexplained. It has passed from the stage of being an abstract concept of only passing interest to that of being one essential to the clinical management of malarial infections.

PREVENTION AND CONTROL OF MALARIA

In regard to measures which relate to the prevention of malarial infections and to basic procedures of control, war time experience and research have made important contributions in the following respects: (*a*) more effective anopheline control by the advent of DDT (4,4′-dichlorodiphenyltrichloroethane); (*b*) more effective drug prophylaxis as a result of the development of new drugs and improved methods in the use of drugs which formerly produced only mediocre results, and (*c*) renewed emphasis on the fact that effective malaria control is attained only to the extent to which organized methods are employed and carried out by a team of specialists.

Role of DDT.—Prior to World War II, the main attack on anophelines was almost solely confined to measures which would destroy larval forms. Measures against adult mosquitoes were difficult and infrequently attempted. With the introduction of DDT, however, the attack has become twofold, i. e., against both larvae and adults.

In the attack against the larval stages, the advantage of DDT has been found to rest principally in the efficaciousness of light applications. For example, 2 quarts per acre of a 5 per cent solution of DDT in diesel oil will now suffice to accomplish as effective a kill as that previously obtained by 20 to 40 gallons of oil without DDT. These light applications thus enable an important saving of oil, of time and of labor to be effected.

Where there are large areas to cover, airplanes have proved effective for the dispersal of DDT. In the extensive trials conducted during the war, different types of planes were used, varying from the small cub plane which would carry only 27 gallons to large multimotored transport planes with a capacity of many hundreds of gallons. These wartime trials indicate that the airplane in the postwar period will serve as an important aid to malaria control, not only as a device for saving time and labor but also for the control of areas otherwise inaccessible.

In the use of DDT to control adult mosquitoes, many promising possibilities are being explored. During the war military forces found that by impregnating bed nets, by spraying the inside of tents and other types of housing and, particularly, by spraying native quarters a significant reduction of the adult mosquito population could be accomplished. The attack on adult mosquitoes means that malaria transmission in an uncontrolled area can be stopped far more readily than has ever before been possible. No longer is it necessary to wait for the natural mortality of infected adult insects, as was formerly the case when the attack was made exclusively against larvae. Even more promising are current experiments in which complete control is being attempted solely by adult kill. Such experiments, it is hoped, will prove that whenever larvicidal measures are impractical for reasons of cost or inaccessibility, effective control by adult eradication can nevertheless be achieved.

This kill of adults is accomplished by the prolonged residual action of DDT. Another method of kill developed during the war is the use of aerosols containing

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[3] Huff, C. G., and Coulston, F.: Development of Plasmodium Gallinaceum from Sporozoite to Erythrocytic Trophozoite, J. Infect. Dis. 75: 231 (Nov.-Dec.) 1944.

[4] Fairley, N. H.: Chemotherapeutic Suppression and Prophylaxis in Malaria, Tr. Roy. Soc. Trop. Med. & Hyg. 38: 365 (May) 1945.

DDT. Under favorable conditions, these aerosols are capable of killing both adult mosquitoes and larvae in a single operation. The method represents an important lead which may prove of value in the control of malaria in civilian communities.

Repellents.—A great deal of wartime research was directed toward the development of new repellents. Unfortunately, repellents at present appear to have so many limitations that their general usefulness for protection against malaria does not seem promising. It is difficult to be certain that persons will use repellents regularly enough to afford any real degree of protection. In fact, a general principle learned during the war was that any measure of malaria control which relies on individual initiative is usually ineffective. Another inherent limitation to the use of repellents is that those which are effective against one species of mosquito frequently are largely without effect against another. Despite these limitations, present day repellents are vastly superior to those used in the past. In the future, persons who will take the trouble to use them will benefit thereby.

Drug Prophylaxis. — Wartime experience and research has greatly extended the usefulness of drugs for prophylactic purposes. It is now possible for military forces to operate in highly malarious, uncontrolled areas without significant malarial morbidity.

During the war, early results obtained with drugs were poor because of insufficient knowledge regarding their capabilities. As an example, rates at Guadalcanal, with all troops supposedly on suppressive treatment, soared to over 1,700 per thousand per annum. It is now known that these rates were unnecessarily high. They were a reflection of the misuse of drug prophylaxis.

The proof of this misuse came later as a result of a series of revealing investigations in the United States, Britain, Australia and elsewhere. These demonstrated that: (*a*) both quinacrine hydrochloride and quinine are fully preventive against malaria due to P. falciparum merely by prolonging the administration of the drug for approximately a month after the last exposure; (*b*) in malaria due to P. vivax these drugs are capable merely of suppressing clinical symptoms, and that overt attacks are inevitable when administration of the drug ceases; (*c*) quinacrine hydrochloride is superior to quinine as a suppressive, and (*d*), the mechanism of protection is not due to a destruction of infective organisms but to the reduction of parasitemia to a level insufficient for the production of clinical symptoms.

Carefully controlled human experimentation has further shown that various factors, such as combat fatigue or any other type of hard physical exertion, extreme cold, anoxia, blood loss and other factors do not precipitate "clinical break-throughs" in persons taking a drug as a suppressive measure. It has been definitely proved that failures with quinacrine hydrochloride which is taken in the recommended suppressive dosage are extraordinarily rare. Clinical break-throughs in troops are now known to be due to failure to take the drug, in the vast majority of cases.

This knowledge gained during World War II has important implications in the present day control of malaria in civil communities. As an example, labor forces working in highly endemic areas can carry on their work effectively to the extent that it is possible to insure that each member of the group takes the prescribed doses of quinacrine hydrochloride. Where malaria due to P. falciparum is prevalent, complete protection will be afforded. With infections due to P. vivax, the eventual problem of curing infections which have been temporarily suppressed must be faced when suppression by means of the drug is discontinued.

New Drugs.—Quinacrine hydrochloride has the serious drawback of staining the skin. In addition, many persons, on initial administration of the drug, experience gastrointestinal symptoms. For this reason, plus its inability to render any more than temporary protection in malaria due to P. vivax, attempts have been made to find other drugs which would not have these shortcomings. In this respect, chloroquine, recently developed, has the advantage that it will not stain the skin, nor does it so commonly lead to gastrointestinal symptoms as does quinacrine usage. Another advantage is that it needs to be administered only in a single weekly dose. This is exceedingly important, as careful supervision of weekly administration is much more feasible than the daily supervision required in the use of quinacrine. Chloroquine, like quinacrine hydrochloride, permits suppressive cure in infections due to P. falciparum and affords only temporary protection against malaria due to P. vivax.

This partial protective effect means that the important need of producing a fully protective drug against infection due to P. vivax has yet to be fulfilled. Some progress seems to have been made toward this objective with Paludrine. It has been shown that this drug, in malaria caused by P. falciparum, is capable of preventing infection, i. e., acts as a true causal prophylactic. Preliminary experiments against the infections due to P. vivax to date indicate that it exerts at least a partial causal prophylactic effect and does so in doses which appear to be nontoxic.

Entomologic Control.—Early in 1942, in the New Hebrides, the first large scale American occupation was followed by a 60 per cent malarial incidence in certain units during the first sixty days after arrival. A year later, malaria was no longer a major problem. By the following year, measures of control had been so successful that the appearance of a single primary case of malaria was viewed as a matter of concern. These dramatic results were achieved despite the prediction of the islands' residents that malaria control was impossible to effect and that every member of the military forces inevitably would acquire the disease.

The striking reduction in the incidence of malaria was not a result of new and revolutionary methods. It was simply the product of organized efforts applied by trained personnel. In this respect the key person probably was the entomologist. For example, on Efate, prior to organized efforts by trained personnel, the island had been surveyed by inexperienced workers. As a result, control efforts were centered on the removal of half shells from the extensive coconut plantations, since these shells appeared to be prolific sources of mosquitoes. The attempt to gather and burn coconut shells constituted a measure requiring enormous effort. With the arrival of the entomologist, it was soon determined that the vectors of malaria did not breed in coconut shells. In contrast, in the margins of several small streams not previously investigated, anophelines were found breeding profusely. It was a far simpler task to control breeding on these few streams. Results in reduced malarial incidence were soon forthcoming; however, had the original approach been continued, not a single anopheline larva would have been killed, nor would a single case of malaria have been averted.

While the entomologist was a key person in that his training enabled him to locate the single species transmitting malaria and to concentrate efforts on that species, the rapidity with which control was achieved was actually the expression of teamwork on the part of various workers. Thus, in addition to the entomologist, a malariologist directed the overall program and an engineer carried out control operations.

Malaria control not only succeeded on Efate but also met with similar success on the many other islands of the South Pacific where specialists and organized methods were employed. The present day significance of these wartime achievements in the control of malaria is that they reemphasize the fact that a like approach in civilian communities is essential. With such methods, according to Russell,[5] "One may reasonably hope that, with suitable organization, malaria will be eradicated from the United States within the next decade, and that in many tropical areas, even though economically depressed, this disease, now of the greatest importance, may become in the next half century one of the least of public health problems."

ANASTOMOSIS OF THE AORTA TO A PULMONARY ARTERY

Certain Types in Congenital Heart Disease

WILLIS J. POTTS, M.D.
SIDNEY SMITH, M.D.
and
STANLEY GIBSON, M.D.
Chicago

In 1945 Blalock and Taussig[1] introduced a new surgical procedure for the relief of anoxemia due to pulmonary stenosis or pulmonary atresia. By anastomosing the subclavian or innominate artery to either the right or the left pulmonary artery they have been able to increase the flow of blood to the lungs. Their work is an outstanding contribution to the relief of children whose outlook without aid is hopeless. Sacrifice of the subclavian artery for the anastomosis of its proximal end to the side of a pulmonary artery is associated with little danger to the circulation of the arm. Use of the innominate artery for such an anastomosis entails the hazard of an inadequate supply of blood to the brain.

The possibility of making a direct anastomosis between the aorta and the adjoining pulmonary artery was reviewed. Gross and Hufnagel[2] and Blalock and Park[3] concluded from their experimental work on animals that clamping off the aorta completely for any considerable length of time leads in a fair percentage of experiments to paralysis of the hind legs caused by temporary anemia of the spinal cord. An anastomosis, therefore, between the aorta and the pulmonary artery can be performed safely only if a substantial amount of blood is flowing through the aorta during the procedure. This was made possible by the use of a new type of clamp which two of us have designed (W. J. P. and S. S.), which is illustrated in figure 1. The two flanges of this clamp encircle the aorta and, when closed, pinch off a small but sufficiently large portion of the aorta to allow room for an anastomosis. The major portion of the aorta lies in the hollow of the clamp and rests against it. Since each pulsation of the enclosed aorta is transmitted to the back of the clamp with the same force as that which acts against the portion of the aorta which is occluded, there is no tendency for the clamp to slip off. It is unnecessary to tighten the clamp beyond simple occlusion. When the clamp is closed the lumen of the aorta is reduced to approximately half its size.

Other instruments which we developed or designed for the aortic pulmonary anastomosis are illustrated in figure 2.[4]

The details of aortic pulmonary anastomosis were worked out on approximately 30 dogs. This operation could not have been performed successfully on the human being without preliminary work on animals. Although the experimental work will be reported later, it is pertinent to state here that none of the animals showed any postoperative paralysis of the hind legs.

TECHNIC

Aortic pulmonary anastomosis has been performed on 3 children. Although there were slight variations in each operation, the technic in general was as follows:

Cyclopropane and oxygen anesthesia was used. In an operation of this type expert anesthesia is essential. This was given by Dr. Wm. O. McQuiston.

A cannula was inserted into the saphenous vein at the ankle for the continuous administration of plasma and for the emergency administration of blood. The child was placed on its right side with the left arm abducted and fastened to the anesthetic shield. A curved incision was made below the left scapula from the edge of the erector spinae muscles to the nipple line (fig. 3 *A*). The chest was entered by an incision through the fourth interspace, and adequate exposure was obtained with a ribspreader. The collapsed upper lobe of the lung was displaced from the operative field by a wet laparotomy pad.

The left pulmonary artery was identified and freed from surrounding structures by blunt dissection. Small tortuous veins overlying the artery were tied and cut. The artery was occluded for two minutes to determine whether the right pulmonary artery alone would carry sufficient blood to support life during the time required for the anastomosis. Detectable changes in color, pulse rate, respiratory rate and blood pressure were not observed in any case. The aorta was then dissected from its bed. With scissors an incision was made through the reflection of the parietal pleura over the lateral surface of the aorta, just distal to the arch. The vagus nerve was identified in its position between the aorta and the pulmonary artery and displaced posteriorly. The intercostal arteries arising from that portion of the aorta to which the clamp was later to be applied were doubly ligated with silk and cut between the ligatures. Two silk ligatures were placed around the pulmonary artery, each encircling the vessel twice. One was placed as far distally as possible, the other as far proximally as possible (fig. 3 *B*). The pericardial sac

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[5] Russell, P. F.: Lessons in Malariology from World War II, Am. J. Trop. Med. **26:** 5 (Jan.) 1946.

From the Children's Memorial Hospital and the Department of Surgery, Northwestern University Medical School.

We wish to acknowledge the cooperation of Dr. A. J. Carlson and Dr. A. C. Ivy, as well as that of the resident and nursing staffs of the Children's Memorial Hospital.

The experimental work was aided by the Otho S. A. Sprague Memorial Institute and by the Northwestern University Women's Faculty Club Fellowship in Pediatric Surgery to Dr. Sidney Smith.

[1] Blalock, A., and Taussig, H. B.: The Surgical Treatment of Malformations of the Heart in Which There Is Pulmonary Stenosis or Pulmonary Atresia, J. A. M. A. **128:** 189-202 (May 19) 1945.

[2] Gross, R. E., and Hufnagel, C. A.: Coarctation of the Aorta, New England J. Med. **233:** 287-293 (Sept. 6) 1945.

[3] Blalock, A., and Park, E. A.: The Surgical Treatment of Experimental Coarctation (Atresia) of the Aorta, Ann. Surg. **119:** 445-456 (March) 1944.

[4] These instruments and the clamp shown in figure 1 were made for us by V. Mueller and Co., 408 South Honore Street, Chicago.

was not opened. The clamp was then applied to the aorta and slowly closed (fig. 3 *C*). In each patient after the clamp was closed a thrill was palpable distal to the clamp, indicating that blood was rushing through the constricted aorta. If a section of aorta sufficiently large for anastomosis did not protrude beyond the flanges of the clamp as it was closed, the adventitia of the aorta was grasped and enough of the aorta drawn out to make suture technically possible. The adventitia was dissected only from that portion of the aorta protruding from the clamp. With an extremely sharp, small-blade knife a longitudinal incision 5/16 to 6/16 inches (8 to 9.5 mm.) long was made in the clamped-off portion of the aorta. While this incision was being made the rounded wall of the aorta was flattened by pressure with the spread prongs of a tissue forceps. Unless the wall of the aorta is cut squarely, the edges have a tendency to fray. The two ligatures doubly encircling the pulmonary artery were tied to the corners of the clamp, thus simultaneously occluding the vessel and alining it with the aorta for anastomosis. Opposite the incision in the aorta an incision of similar size was made in the occluded pulmonary artery. This incision was made slightly diagonal so that at completion of the anastomosis the vessels in assuming their normal relationship would not produce a kink in the pulmonary artery (fig. 3 *D*).

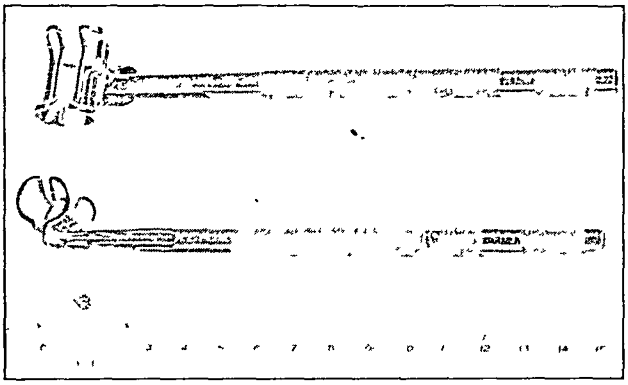
Fig 1.—Clamp for anastomosis of the aorta to a pulmonary artery.

The anastomosis was done with no. 5 Deknatel silk on a no. 9 curved atraumatic needle. The suture, beginning at the upper angle, was carried through the pulmonary artery from the outside in, then across through the aorta from the inside out—and tied (fig. 3 *E*. This brought the knot outside the vessels. In continuation of this suture, the posterior lip of the pulmonary artery was sewed to the posterior lip of the aorta by a running, over and over stitch. These stitches, approximately 1 mm. apart, included all layers of both vessels. In this portion of the anastomosis adventitia was brought to adventitia. At the lower angle of the wound the suture was locked and then continued as a running suture, bringing the anterior lip of the pulmonary artery to the anterior lip of the aorta, intima to intima. The long end of the suture was tied to the short end to complete the anastomosis. The ligatures holding the pulmonary artery to the clamp were cut, first the distal, then the proximal. The aortic clamp was then slowly released and removed. In no instance was there enough bleeding to require additional sutures. In each patient the thrill of blood flowing through the new opening could be felt.

The lung was reexpanded, and the incision in the chest was closed with three chromic gut sutures encircling the adjoining ribs. The muscles were reunited, and the skin was closed with silk.

REPORT OF CASES

We shall not undertake a discussion of the criteria for diagnosis of the tetralogy of Fallot. These criteria have been set forth by Blalock and Taussig, and we have attempted to select our cases in accordance with the principles which they have laid down.

Case 1.—*History and Examination.*—D. S., a girl, born Dec. 10, 1944, weighing 6 pounds and 10 ounces (3,005 Gm.), appeared to progress normally until she reached the age of 3 months. At that time the mother observed that the baby became blue around the lips during her feeding and seemed quite limp at the conclusion of her meal. The cyanosis increased gradually in intensity, was particularly noticeable after feeding, crying or fretting and eventually was observed even when the infant was at rest Dyspnea became evident as time went on Finally her condition became so poor that feeding was a serious problem. If she were fed a little too much or took her food too rapidly she became extremely cyanotic and limp, her eyes became fixed, and she lapsed into unconsciousness On two occasions the mother thought that the child was dead. The entire household was organized with the single thought of contributing to her comfort. Her 3 year old brother was kept from her room, and neighboring children were not allowed to play in the house

Though the child had sat up at 6 months, she had never walked or stood alone. She had gained slowly in weight

She was first seen by us on Sept. 9, 1946 at the age of 21 months. Her weight at that time was 18 pounds 4½ ounces (8,291 Gm.). She was intensely cyanotic. The fingers were clubbed. Examination of the heart revealed a harsh systolic murmur along the left sternal margin The roentgenogram did not show enlargement of the heart. The heart appeared to sit high on the diaphragm, and the apex was blunt and rounded. There was a concavity in the region of the pulmonary cone. The aorta could be seen in its normal position. Fluoroscopic examination failed to show pulsations in the pulmonary arteries. The electrocardiogram showed axis deviation to the right. The red blood cell count was 10,310,000 per cubic millimeter, the hemoglobin level was 18 6 Gm Because

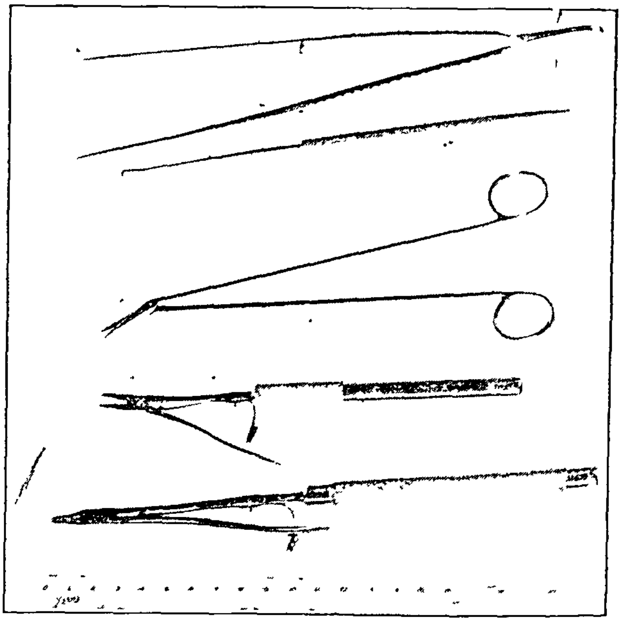
Fig. 2.—Essentially standard instruments modified to work in a small, deep cavity.

of the patient's critical condition, oxygen saturation studies of the arterial blood were omitted. We believed that she presented the typical picture of a severe case of the tetralogy of Fallot.

Operation.—The operation was performed on Friday, Sept. 13, 1946. Cyclopropane anesthesia with a high concentration of oxygen was given by the closed method with a snugly fitting face mask. The child's color improved greatly at the beginning of anesthesia and remained good throughout the operation.

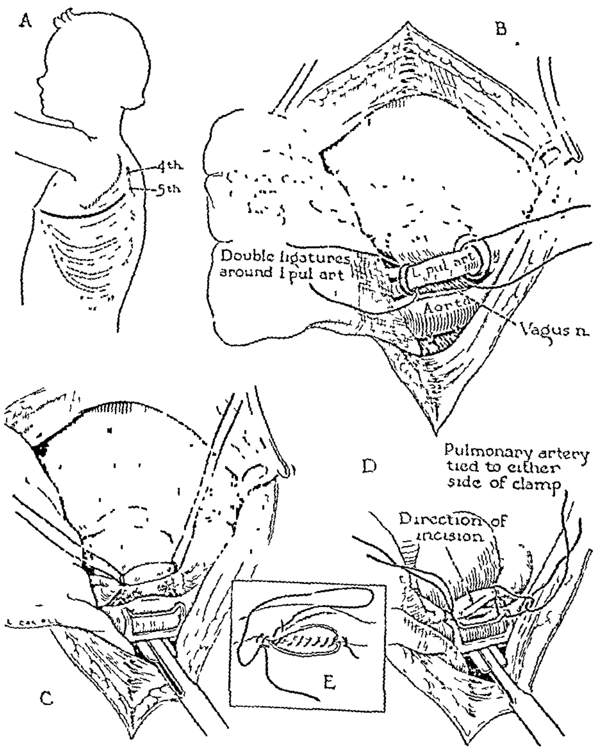
A
4th
5th
B
Double ligatures around l pul art
L. pul. art
Aorta
Vagus n.
Pulmonary artery tied to either side of clamp
D
Direction of incision
C
E

Fig. 3.—Technic of operation: *A*, incision; *B*, ligatures around pulmonary artery; *C*, clamp applied to aorta, and *D*, diagonal incision of occluded pulmonary artery, and *E*, the suture.

The left pleural cavity was entered posteriorly through the third interspace. The incision was too high. Adequate exposure was not obtained until the fourth, fifth and sixth ribs were cut along the erector spinae muscle. The pulmonary artery was identified and exposed without difficulty. Small, tortuous, dilated veins lying on the pleura over the aorta were tied and cut. On lifting the aorta from its bed, we observed an unusual number of small arteries, at least a dozen, arising from that small portion of the aorta where the clamp was to be applied. Some of them were intercostal arteries, and the rest presumably were vessels which had dilated in response to a demand for collateral circulation to the lung. Isolating, ligating and cutting these vessels was the most tedious and time-consuming part of the operation.

Since the pulmonary artery lay in the same plane as the aorta, the incision in it was made parallel with its longitudinal axis. The actual anastomosis was performed without difficulty and required twenty-three minutes. When the clamp was removed a palpable thrill could be felt in the anastomotic channel. The chest was closed. The total operating time was three hours.

The blood pressure at the beginning of the operation was 95 systolic and 60 diastolic; at the close of operation it was 100 systolic and 60 diastolic. When the clamp was tightened on the aorta, the systolic blood pressure rose 10 points but in a few minutes returned to its previous level. The pulse rate remained practically constant throughout the operation at 120 to 132 beats per minute. The patient received 200 cc. of plasma during the operative procedure.

Postoperative Course.—The infant was brought to her room in good condition. She received 100,000 units of penicillin in the plasma which was being administered by vein. Thereafter she received 30,000 units of penicillin every three hours for ten days. In the first twenty hours following operation she received 200 cc. of 5 per cent dextrose in isotonic solution of sodium chloride and 625 cc. of a solution of 10 per cent dextrose in water. Her postoperative course was remarkably smooth. She was kept in an oxygen tent for three days. Vomiting did not occur. She began taking fluids twenty-four hours after operation and was given a soft diet on the following day. The lungs remained clear. Examination of the heart revealed a slight carry over of the murmur into diastole, though it was not comparable to the harsh continuous murmur which one hears in the typical patent ductus. The most striking change was in her color and in her general behavior. She took her food without difficulty; when disturbed by her doctors she cried for several minutes without turning blue, and in the intervening time she was happy and playful. She gained a pound (454 Gm.) in the first eleven days after operation

On the third day following operation her red blood cell count was 6,600,000 per cubic millimeter, hemoglobin content 14.3 Gm. and hematocrit reading 44. Subsequent counts at three day intervals gave substantially the same results. She was discharged from the hospital on October 2, nineteen days after operation. A later note from the mother states that the baby's condition is excellent, and that her color compares favorably with that of the other children who now come in to visit her.

Case 2.—*History and Examination.*—G. M., a girl, born Jan. 21, 1935, made her first visit to our outpatient department at the age of 14 months because of inabiltiy to move her left arm and leg during the previous three days. Examination at that time revealed slight generalized cyanosis with a deeper color about the gums, lips and fingertips. A systolic murmur was heard over the precordium, maximal in the second and third interspaces on the left side along the sternal margin. A thrill was palpable. A left hemiparesis was present. The deep reflexes on the left were increased. Ankle clonus and positive great toe reflex were present. The diagnosis at that time was congenital heart disease complicated by cerebral thrombosis. She was seen at intervals in the outpatient department. She became gradually more cyanotic, was very late in walking, and her mental progress was slow.

She was admitted to the hospital on Sept 5, 1946, at the age of 11 years and 8 months. She was a small, thin child, weighing 54 pounds (24.5 Kg.). The left arm and leg were smaller than the right, with some spasticity due to the cerebral accident which had occurred in infancy.

The entire skin was cyanotic with intense cyanosis about the eyes, lips and tips of the fingers and toes. Clubbing of the fingers and toes was well defined. Psychometric examination established her intelligence quotient at 66. Cardiac examination failed to reveal any enlargement. There was a short, harsh systolic murmur, best heard in the second and third interspaces on the left side and not widely transmitted. The roentgenogram showed slight cardiac enlargement, with a blunt, rounded apex. There was a concavity in the region of the pulmonary conus. Under the fluoroscope a pulmonary window was seen but pulsations were not observed in the pulmonary arteries. The electrocardiogram showed well defined axis deviation to the right. The red blood cell count was 10,190,000 cells, the hemoglobin level 26.5 Gm. and the hematocrit reading 79. The oxygen saturation of the arterial blood was 38.7 per cent.

Operation.—The operation was performed on September 16. Under cyclopropane and oxygen anesthesia the intense cyanosis did not improve appreciably.

There was persistent and troublesome bleeding from the severed muscles of the chest wall. The left pleural cavity was opened through the fourth interspace, and adequate exposure was obtained without cutting any ribs. Each time the upper lobe of the left lung was retracted there occurred a "bronchial spasm" which made it momentarily impossible to force oxygen into the lungs with a pressure bag. After repeated episodes, it became obvious to the anesthetist that the administration of intratracheal anesthesia was necessary. Because of the extreme anoxia it was necessary to close the chest and reexpand the lung before the intratracheal tube could be introduced safely. Under intratracheal anesthesia the operation was resumed.

The hilus of the left lung was covered with a mass of tortuous veins black with cyanotic blood. The pulmonary artery was exposed and isolated with great difficulty. Any tiny vein accidentally torn oozed tarry blood, which obscured the field. The aorta was easily freed. Five intercostal arteries were doubly tied and then cut to make room for the clamp. Too rapid closure of the clamp on the aorta resulted in a rise in the systolic blood pressure from 100 to 132. The clamp was released, and the blood pressure returned to 100. When the clamp was closed more slowly the systolic blood pressure rose to 110 mm. and remained at that level throughout the anastomosis. On completion of the anastomosis, a thrill was palpable but was less intense than in the previous patient. The actual anastomosis required forty-five minutes. During the operative procedure the child received intravenously 100 cc. of isotonic solution of sodium chloride, 200 cc. of whole blood and 300 cc. of plasma.

Postoperative Course.—The patient was in poor condition when returned to her room. She was placed in an oxygen tent, and 100,000 units of penicillin was administered in the intravenous fluids. Subsequently 30,000 units of penicillin was given intramuscularly every three hours. She roused slightly several hours after operation, and it was then observed that she failed to use her right arm and leg. She remained in a semiconscious state. On the morning after the operation her color was distinctly improved. Some hours later she became dyspneic, and coarse moist rales were heard throughout the chest. Supportive treatment was ineffective, and she expired at 8:00 p. m. on September 17, thirty-six hours after the operation.

Postmortem examination revealed that the anastomotic channel was open. Leakage had not occurred. There was a small thrombus in the left pulmonary artery proximal to the site of anastomosis. The pleural cavity was dry. Thick mucopurulent secretion was present in the trachea and bronchi. The lungs were congested. A scar was found in the right frontoparietal region of the brain, obviously the result of the cerebral accident which the patient suffered at the age of 14 months.

On the left side a hemorrhagic infarct occupied the upper portion of the postcentral gyrus.

CASE 3.—*History and Examination.*—B. K., a girl, born Aug. 5, 1938, weighing 6 pounds, 8¾ ounces (2,969 Gm.), was first seen in the outpatient department at the age of 3 weeks, at which time she had a loud systolic murmur over the precordium, maximal at the third interspace on the left side. There was no cyanosis. A tentative diagnosis of defect of the interventricular septum was made. When the infant was seen on March 8, 1939 at the age of 7 months, the mother reported that the baby became breathless when a large amount of food was taken at one time. On Sept. 30, 1939 examination revealed cyanosis on crying and slight clubbing of the fingers. She was then lost to the clinic until Aug. 11, 1945. At that time she was definitely cyanotic and tired easily on exertion. She had grown slowly and weighed only 27½ pounds (12 Kg.) at the age of 7 years.

She was admitted to the hospital on Sept. 21, 1946. The mother stated that the child had recently been able to exercise less than formerly and would squat down to rest after walking half a block.

Physical examination revealed a small, slender child who was decidedly cyanotic, with suffusion of the eyes and clubbing of the fingers. Her weight was 29½ pounds (13 Kg.).

There was a harsh systolic murmur over the precordium, best heard on the left along the sternal margin at about the third interspace. Roentgenologic examination showed the heart to be slightly enlarged with a rounded blunt apex and without fulness in the region of the pulmonary cone. The aortic knob was visible to the left of the sternum. In the left anterior oblique position the pulmonary window seemed to visualize well. The electrocardiogram showed decided axis deviation to the right. The red blood cells numbered 9,880,000 per cubic millimeter, the hemoglobin content was 24.8 Gm. and the hematocrit reading was 67.

Operation.—The operation was performed on September 27. Intratracheal cyclopropane and oxygen anesthesia was administered by Dr. Wm. O. McQuiston. The patient's color was much better under anesthesia than it had been previously.

The left pleural cavity was entered through the fourth interspace posteriorly, and adequate exposure was obtained with a ribspreader. The pulmonary artery was easily separated from surrounding structures. That portion of the aorta immediately distal to the arch was exposed. Six intercostal vessels required ligation. One of them was at least 2 mm. in diameter. The blood pressure remained unchanged during slow closure of the clamp on the aorta.

Incision in the pulmonary artery was made at an angle so that on completion of the anastomosis the vessels lay in normal relationship to each other without kinking the pulmonary artery.

The pulmonary artery was rather large and consequently wrinkled by the two encircling, holding ligatures. The bite taken in suturing the anterior lip of the pulmonary artery to the anterior lip of the aorta was too large. When the anastomosis was completed and the clamp removed, some constriction of the pulmonary artery was apparent. While this probably made little difference in the flow of blood through the pulmonary artery, it was a technical error. A palpable thrill could be felt in the anastomotic channel. The lung was reexpanded and the chest closed. The child received 300 cc. of plasma intravenously during the operative procedure. Her condition at the close of the operation was excellent. The operative time was two hours and forty minutes.

Postoperative Course.—The patient was returned to her room in good condition. She was placed in an oxygen tent. One hundred thousand units of penicillin was given in the intravenous fluids which she received following operation, and 30,000 units of penicillin was given every three hours for fourteen days postoperatively. On the evening of the operation she took sips of fluid, and on the next day she received a soft diet. Her condition was good. On September 30 it was noticed that dulness and diminished breath sounds were present over the left side of the chest. Inasmuch as the child seemed comfortable paracentesis was not performed. However, the signs in the chest gradually increased, and on October 3 she appeared tired but was not distinctly dsypneic. A chest tap was performed, and 240 cc. of grossly bloody fluid was removed. From this point on, recovery has been uneventful and the roentgenogram reveals that the chest has cleared. At the present writing, seventeen days after operation, she is walking freely about the ward. She has only a slight cyanotic tinge. She requests second helpings at each meal. She has gained 4 pounds (1.8 Kg.) since the operation.

On the third day following operation, her red blood cell count was 6,640.000 per cubic millimeter, the hemoglobin content 18.6 Gm., and the hematocrit reading 50.5. Subsequent examinations gave essentially the same results. The oxygen saturation of the arterial blood on October 11 was 77 per cent. The heart was examined daily following operation, and we were somewhat disturbed by the fact that the murmur seemed to be identical with that which had been heard previously. When the dressings were completely removed, however, a soft but distinct diastolic blow in addition to the systolic murmur was audible.

COMMENT

One of the possible advantages of this operation lies in the fact that we are free to make the anastomotic channel whatever size seems proper. Only years of experience and observation will determine the answer to that question. Thus far we have been guided by the work of Blalock and Taussig and have attempted to make the openings approximately the size of either the innominate or the subclavian artery. It may be that an additional field of usefulness of this operation will be in younger children in whom it is desirable to avoid sacrifice of the innominate artery.

In the first child, aged 21 months, the incision in the aorta measured $\frac{5}{16}$ inch (8 mm.); in the other 2 children, aged 8 and 10 years, respectively, the incision measured approximately $\frac{6}{16}$ inch (9.5 mm.). These figures do not represent the diameter of the anastomotic channel. An 8 mm. cut in a vessel will produce on expansion of that vessel an opening approximately 5 mm. in diameter, and a 9.5 mm. cut will produce an opening slightly less than 7 mm. (Formula: Length of the incision $\times 2 \div 3.1416 =$ diameter of the opening.) Will the anastomotic channel enlarge as the child grows, or will it remain fixed? Work has been planned to answer this question. At present it seems logical to gage the size of the opening by the age, weight and degree of anoxemia of the patient.

Vascular surgeons agree that it is desirable to suture all vessels intima to intima. However, from our experimental evidence we do not believe that in aortic pulmonary side to side anastomosis the complex technic of suturing intima to intima in the posterior row of sutures is necessary or desirable. Bleeding is less apt to occur from such a suture line between vessels which are opposed adventitia to adventitia. This fact is important in an anastomosis in which the posterior row of sutures is inaccessible after the anterior row has been completed. In 30 anastomoses on dogs and 3 on children bleeding from the posterior suture line was not present. Furthermore, we have found that intra-aortic pressure tends to oppose the inverted lips of the posterior row of sutures, leaving an almost negligible gap between the intimal edges. It is true that a running over and over stitch opposing adventitia to adventitia does expose more suture material to the flow of blood. This does not violate the principles of vascular surgery (Smith[5]).

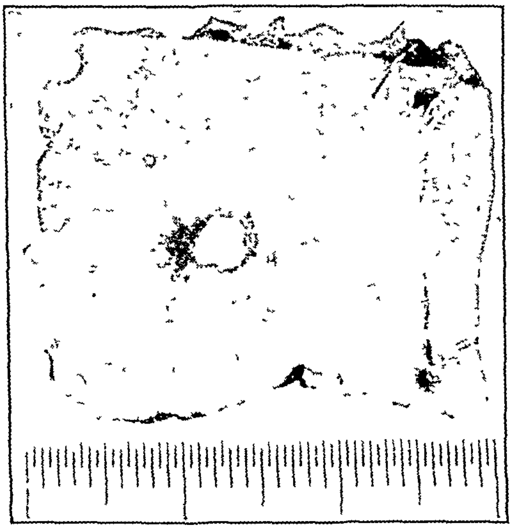

Fig 4—Anastomotic channel between aorta and left pulmonary artery from a dog eighty one days after operation, the aortic side

The suture material and the anastomotic margins are covered with a layer of endothelium within twelve to twenty-four hours (Carrel and Guthrie,[6] Smith[7] and Horsley[8]). To date, in none of the animals which we have killed from one to eighty-one days following aortic pulmonary anastomosis have we found more than pinhead sized thrombi on the suture line. In fact, the anastomotic lumen of the dog killed after eighty-one days was entirely free from thrombi, and the silk was deeply covered with endothelium (figs. 4 and 5).

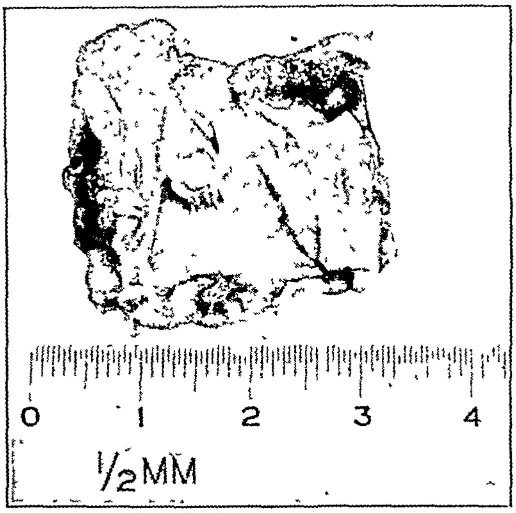

Fig. 5.—The pulmonary side of anastomotic channel in figure 4.

CONCLUSION

Only because we were backed by the fundamental principles set forth by Blalock and Taussig for the surgical relief of anoxemia in certain types of congenital heart disease did we have the courage to attempt this new operation. The operation is not a simple one. In attempting this new procedure it seemed only fair to choose those patients whose condition was such that without aid their future was hopeless. The 2 children who survived the operation have been tremendously benefited.

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[5] Smith, S. Studies in Experimental Vascular Surgery, Surgery **18:** 627 643 (Nov) 1945

[6] Carrel, A , and Guthrie, C. C Uniterminal and Biterminal Venous Transplantations, Surg , Gynec. & Obst **2:** 266 286, 1906.

[7] Smith, S · A Soluble Rod as an Aid to Vascular Anastomosis, Arch Surg. **41:** 1004 1007 (Oct) 1940.

[8] Horsley, J. S . Surgery of the Blood Vessels, St. Louis, C. V. Mosby Company, 1915.

Epidemic Hepatitis.—During this war epidemic hepatitis has attained pandemic proportions. Large outbreaks have occurred in many parts of the world and in the armies of a number of nations The pathology of this disease as observed in the Army of the United States during the epidemic of 1942 has been dealt with in previous papers More recently an acute form of epidemic hepatitis of intense severity terminating fatally in less than ten days has become prevalent; this we have termed the fulminant form In a new series of 196 fatal cases occurring between August 1943 and April 1945 which we have studied at the Army Institute of Pathology, over half fall into this category By contrast, in the previous series not a single equally fulminant case was encountered, and only 1 was reported in the great Swedish epidemic of 1927; the usual duration of the fatal disease was then from four to six weeks; in other words, the course of fatal hepatitis was predominantly subacute. These divergences in duration reflect striking differences in the pertinent pathologic changes Thus, in the more fulminant form the parenchyma of the liver is destroyed completely and uniformly, and this destructive process is accompanied with an intense inflammatory reaction In the more subacute form seen in 1942 and also in about one fourth of the 1943-1945 series destruction of the liver is incomplete, the involvement characteristically not uniform, regenerative hyperplasis of surviving parenchyma leads to the production of much new tissue, and inflammation is less pronounced—Lucke, Balduin, and Mallory, Tracy: The Fulminant Form of Epidemic Hepatitis, *Am. J. Path.* 22:868 (Sept) 1946

CEREBROSPINAL CRYPTOCOCCOSIS

C. M. MEZEY, M.D., and ROGER FOWLER, M.D.
New London, Conn.

Cryptococcosis is a subacutely or chronically manifested infection caused by a yeast called Cryptococcus neoformans which may involve the skin, lungs, lymph nodes or other parts of the body but which has a decided predilection for the brain, meninges and spinal cord.

The disease is also called European blastomycosis, torulosis and Busse-Buschke's disease. The causative yeast has about fifty synonyms, of which the best known are: Cryptococcus neoformans, Vuillemin, 1901; Saccharomyces, Busse, 1894; Saccharomyces neoformans, Sanfelice, 1895; Cryptococcus hominis, Vuillemin, 1901; Torula neoformans, Weis, 1902; Torula histolytica, Stoddard and Cutler, 1916; Cryptococcus histolyticus, Castellani, 1928; Cryptococcus meningitidis, Dodge, 1935; Debaryomyces hominis, Todd and Herrmann, 1936; Cryptococcus farciminosus, Rivolta; Saccharomyces farciminosus, Tokushige, and Endomyces farciminosus, Eberbeck. The present accepted terminology of Cryptococcus neoformans is suggested by the National Research Council (Manual of Clinical Mycology).[1] All these synonyms are based on a botanic classification which is still subject to many controversies.

The appearance of the cryptococcus in infected material is the same as in blastomycosis. If the material is not examined promptly a contamination of saprophytic cryptococcus may be present also. According to the military medical manual of mycology, the cryptococci are differentiated from other fungi by their single bud and wide capsule and their failure to produce a moldlike growth at room temperature. No distinctive reproductive process can be discovered in any of the yeastlike organisms. They adapt themselves entirely to their culture mediums and their environment, which adaptation even causes genetic changes in them, according to Brumpt.[2] This type of fungus lacks a constant morphologic character, and the morphology depends entirely on the medium, age and temperature. In a fresh growth at room temperature on Sabouraud's heavy mediums it is impossible to differentiate the torula from the blastomyces. It is in older cultures in which the mycelium is vanishing that the differentiation may be possible, but as a rule the plate interpretation is confusing. The pathologic and clinical picture is essentially the same in both blastomycosis and cryptococcosis, the most striking identity being shown in the meningitic type of the disease.

For these reasons it would be advisable to give one clinical name to all diseases caused by yeasts instead of adhering to the botanic classifications.

In 1937 Levin[3] analyzed 60 well authenticated cases of the meningitic type. He found that the average duration of the disease is five or six months. The prognosis is extremely poor; in the case on record longest the patient lived for five and a half years. Its clinical course may resemble any other type of meningitis; yet the ease of demonstrating the yeast cells in the spinal fluid on direct examination makes the differentiation rather easy.

This disease occurs as a chronic one of solipeds and occasionally in cattle also, with a predilection for the lymph glands and lymphatic vessels. It is called epizootic lymphangitis. Benham[4] inoculated a saline suspension of the yeast intraperitoneally in mice. Lesions developed slowly. Gelatinous masses around the site of the injection and enlargement of the peritoneal nodes and brain tissue revealed the presence of the yeast.

In our series of mice inoculations, all the mice died within fourteen days and showed granulations containing yeast cells around the site of infection, but we have been unable to see distant metastases. The cause of death was apparently a rapidly developing toxemia.

No toxic products can be demonstrated in the cultures. No exotoxins or cutaneous hypersensitiveness are present, and agglutinins develop only in a low titer, no higher than 1:180 dilution. We believe that toxic products are formed in the body by the disintegration of free parasitic cells.

According to Hutyra,[5] an animal can be immunized in about fifty days, but until immunization takes place there is a hypersensitization present. The disease consists of a long chain of recurrences which show definite periodicity. They are released at intervals of eighteen to twenty-one days. Such periodicity can not be explained, unless the onsets are released by repeated reinfections or autoinfections. Complete recovery brings immunity. The road toward immunization is a series of attacks of lesser intensity. For practical purposes it seems safe to assume that if sixty days pass after the last recurrence and the patient shows signs of clinical well-being, he can be considered immune.

Martin and Smith[6] have used a complement fixation test in which the level of the antibody titer is used to indicate the degree of infection. A high antibody titer indicates an extremely unfavorable prognosis. A more favorable course can be anticipated when the complement fixation test is negative. However, we are unable to determine by this test whether or not immunity has taken place.

The source of the infection is unknown. Cases of human infection from animals have been reported occasionally; Negre[5] reported the case of a veterinarian who infected his thumb while operating on an infected horse. The veterinarian recovered after the intravenous injection of 6 Gm. of arsphenamine. Tokushige has reported several infections in China. The transmission of the infection by insects, according to Hutyra,[5] is principally only an incidental conveyance.

Cryptococcosis has been reported in children of less than 10 years of age and in adults of more than 70 years, but most of the cases occur in patients between the ages of 40 and 60. In a series of 60 cases of meningeal cryptococcosis 39 were men and 21 were women. All races are apparently equally susceptible.[1] There are relatively more cases reported in Algiers and China than in any other part of the world. The reason may be that the torulosis of horses is a common disease in these countries. To our knowledge there have not been reported any cases in which the disease was transmitted from man to man. Benham[4] showed that the pathogenic human strains differed morpho-

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From the Lawrence and Memorial Associated Hospitals

[1] Conant, N. F., and others Cryptococcosis, in Manual of Clinical Mycology, Military Medical Manual, National Research Council, Division of Medical Sciences, Philadelphia, W. B Saunders Company, 1944, pp 111 126

[2] Brumpt, E · Précis de parasitologie, Paris, Masson & Cie, 1927.

[3] Levin, F. A · Torula Infection of the Central Nervous System, Arch Int Med **59**: 667 (April) 1937.

[4] Benham, R W.· Cryptococci, Their Identification by Morphology and by Serology, J. Infect Dis **57**: 255, 1935

[5] Hutyra, F., and others Special Pathology and Therapeutics of the Diseases of Domestic Animals, translated by C F. Marshall and C. M. Ottley, London, Bailliere, Tindall & Cox, 1938, pp 779-793

[6] Martin, D S., and Smith, D. T.: The Laboratory Diagnosis of Blastomycosis, J Lab & Clin Med **21**: 1289, 1936

logically, serologically and pathologically from the animal strains; yet we know that any yeast will show the most unusual changes in its biology, depending on the mediums and age.

It is thought that the fungus enters through the respiratory tract because in almost every case of cerebrospinal cryptococcosis the history of the patient reveals a mild but definite respiratory infection. Isolated lesions have been reported in the skin, mucous membrane and subcutaneous tissues. The meningeal form of cryptococcosis is always caused by a local infection which spreads to the brain and meninges. Since no sudden onset appears, it is probable that continuous synergenetic sensitization has to be present until clinical types of the organism develop.

In regard to the differential diagnosis, laboratory examination of the spinal fluid or other infected bodily secretions will rapidly and in an easy way demonstrate the presence of yeast cells. These smears should be unstained and diluted with a drop of distilled water. The staining methods are of no advantage, often making recognition even more difficult. The india ink method of staining gave us poor results. Probably the reason for this is that the india ink obtainable now is full of impurities and not a colloidal suspension. Therefore, it will not differentiate the yeast cells from the surrounding field.

The roentgenologic diagnosis may reveal a shadow in pulmonary infections without the formation of a cavity. The mediastinum is rarely involved. Just the opposite picture is seen in actinomycosis. The increased intracerebral pressure in chronic cases may produce atrophic changes in the inner table of the bone, but the bone itself is not invaded. Yet the roentgenogram will give no clue in the early case in which diagnosis is most urgently needed. Since there is no convincing evidence concerning the allergic status in cryptococcosis, we do not see any justification for skin testing as a diagnostic procedure.

REPORT OF CASE

History.—A white city housewife aged 38 was admitted to the Lawrence and Memorial Associated Hospitals on Dec. 27, 1945, complaining of vague headaches, nausea, slight cough and generalized muscular pains.

The familial, marital and past histories were noncontributory. The environmental conditions were excellent.

For about nine months before admission the patient felt occasional occipital headaches, which were rather dull and occurred in periodic spells of two to three days' duration. These headaches gradually increased in intensity and were occasionally accompanied by nausea and vomiting. She had a slight chronic cough most of the time and expelled a small amount of grayish sticky sputum. She had not consulted a doctor for any of these symptoms, but had taken different medicaments for her headaches, none of which gave any relief.

Five days before admission she went to a carol-singing, where she was exposed to windy, cold weather. The next day severe muscular pains in the neck and posterior region of the shoulders developed, which forced her to go to bed. Her condition was diagnosed as acute myositis and she was treated accordingly. Three days later the pains spread to muscles all over the body and were especially severe in the muscles of the calves. There was continuous nausea followed by vomiting immediately after the ingestion of food. Fever was not present at any time, although the patient complained of severe chills at the onset. Active motion increased the muscular pains and motion of the head induced vomiting. A day before admission she seemed confused and drowsy.

Admission and Examination.—The patient was admitted in the hospital with a tentative diagnosis of acute myositis and cyclic vomiting due to a possible trichinosis. On admission her temperature was 98.6 F., her pulse rate 60, her respiratory rate 25, and her blood pressure 120 systolic and 65 diastolic. She gave the impression of being extremely ill and showed signs of meningism (stiff neck). The neurologic examination did not show any particular changes, nor was any remarkable change seen in other organs.

On account of the stiff neck a spinal puncture was obtained under normal pressure and about 6 cc. of reddish spinal fluid was withdrawn. The laboratory examination revealed a decided xanthochromia, Pandy's test showed a trace of globulin; sugar was 27.5 mg. per hundred cubic centimeters and there were 5 lymphocytes. On counting the cells the technician observed the presence of numerous small cells resembling, but smaller than, the usual red cell. Under close examination these cells showed the typical morphology of yeast. A culture was made on Sabouraud's medium and after ten days a growth was obtained which has been identified as Cryptococcus neoformans. Other laboratory studies on the blood showed a hemoglobin content of 14.2 Gm. per hundred cubic centimeters, 4,770,000 red blood cells and 5,950 white blood cells, with 45 lymphocytes, 1 monocyte, 50 polymorphonuclears with 5 nonsegmenters and 4 eosinophils. Urinalysis revealed an acid reaction, a specific gravity of 1.025, a trace of albumin and a 4 plus reducing substance. The blood sedimentation rate by the method of Cutler showed a diagonal curve which reached 31 mm. in 60 minutes to indicate moderate activity. Roentgenograms of the chest showed increased bronchial markings but were otherwise negative.

Course at the Hospital.—The patient's temperature was flat, except for a moderate elevation of one or two days' duration at intervals of three weeks, corresponding to the exacerbation of the disease. Her course was one of steady improvement. Her muscular pains abated quickly, although dull headaches and nausea of varying degrees remained with her throughout her whole hospital stay. Weekly examinations of the spinal fluid revealed the constant presence of yeast, averaging about 20 yeast cells per millimeter. The patient was dismissed for ambulatory treatment on April 1, 1946.

In her home she resumed her housework and felt well except for occasional malaise and nausea during her periods of exacerbation. She gained 15 pounds (6.8 Kg.). The patient is not immunized as yet.

Treatment.—The treatment of this disease has proved unsatisfactory in the past. We believe that the danger lies in the toxic symptoms caused by the budding of the yeast cells, by which the toxins are most probably released. For this reason we tried a treatment which would "fix" the yeast cells and prevent the emanation of the toxins. To attain this we administered a continuous intravenous drip of 5 per cent alcohol, by which we hoped to obtain a 2 mg. blood level of the alcohol, which, of course, would stop the fermentation of yeast cells. The patient took this medicament cheerfully, and we believe it may have had something to do with her improvement.

Yeast cells are productive of para-aminobenzoic acid and for this reason we did not try sulfonamide compounds. Harford[7] failed to alter the course of the disease with massive doses of penicillin.

Since the patient's immune response was good, we tried massive doses (5 Gm. per day) of iodides. We also tried oxophenarsine hydrochloride, methylene blue and antimony compounds. None of these produced any noticeable effect. Hektoen's vaccine, immune serum and rectal instillations of ether were not tried in this case. Roentgen ray therapy was not tried.

SUMMARY

1. Yeast cells in cryptococcosis are readily recognizable in excretions. The specimen must be freshly examined and should be preferably unstained.

2. A solution of 5 per cent alcohol and dextrose administered intravenously is apparently a valuable adjunct in combating toxemia due to toxins released by budding cells.

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[7] Harford, C. G., and others: Treatment of Staphylococcic, Pneumococcic and Other Infections with Penicillin, J. A. M. A. 127:253 (Feb. 3) 1945.

3. In case of recovery there is an immunity present, but until such immunity develops a state of hypersensitiveness exists which produces periodic attacks due to autoinfection.

4. There is a striking similarity, if not identity, in the clinical pictures of blastomycosis and cryptococcosis.

STREPTOMYCIN THERAPY IN INFECTION OF URINARY TRACT

Failure Because of Development of Resistance

AMEDEO BONDI Jr., Ph.D.
DONALD OTTENBERG, M.D.
CATHERINE C. DIETZ, M.S.
and
CHARLES L. BROWN, M.D.
Philadelphia

The development of resistance by bacteria to chemotherapeutic agents in the treatment of infectious diseases is becoming of increasing importance. With the wide usage of the sulfonamides and penicillin at present and probably of streptomycin in the near future, the problem of the development of fastness by organisms in the body during the period of treatment is a matter of great concern to the clinician. The manner in which organisms frequently become resistant to sulfonamide compounds is well recognized.[1] Development of fastness to penicillin has been observed [2] in some organisms during therapy but occurs much less frequently than fastness to sulfonamide compounds. Failure of organisms to readily develop a fastness to penicillin is probably one of the main reasons for the great effectiveness of this agent. With the newer antibiotic, streptomycin, however, the ease and speed with which organisms become resistant to it in vivo may prove to be a limiting factor in its wide usage. Although this new chemotherapeutic agent is still in its infancy, the development of resistance to it by organisms in the body during treatment has already been reported.[3]

In the following report 2 unrelated cases of infection of the urinary tract caused by Aerobacter aerogenes, a gram-negative coliform bacillus, are described, which were unsuccessfully treated with streptomycin. In both cases the ineffectiveness of streptomycin could be attributed to the development of resistance by the organisms during the course of treatment.

REPORT OF CASES

CASE 1.—F. V., a man aged 28, was admitted to the hospital with fever, chills, sweats, spastic weakness of the lower extremities, urinary retention and failing vision. The history of illness dated back to 1935. Cultures of urine repeatedly disclosed a gram-negative bacillus later identified as A. aerogenes. Blood cultures were negative. A diagnosis was made of infection of the urinary tract secondary to cord bladder due to multiple sclerosis.

The patient showed temporary improvement following a course of penicillin therapy (160,000 units a day for six days), but a low grade fever persisted and cultures of urine continued to be positive for A. aerogenes. An indwelling catheter was left in place at all times, and the bladder was irrigated by continuous tidal drainage with acriflavine in a 1 : 3,000 solution. The culture of A. aerogenes was tested in vitro for susceptibility to streptomycin by a broth dilution technic and was inhibited by 1 microgram (1 unit) per cubic centimeter of culture medium. Therapy with this agent was started in an attempt to clear up the infection. Streptomycin (1 Gm., 1,000,000 units) was administered daily by continuous intramuscular drip and was continued for five days, during which the total dosage was 5 Gm. All other forms of therapy were discontinued during the course of treatment with streptomycin. The patient failed to experience any discomfort from the injections and at no time did any significant local reaction occur. Clinical improvement was not noted at any time during the administration of streptomycin; in fact, in general the clinical condition of the patient was poorer on completion of therapy with this agent.

Cultures of Urine and Susceptibility to Streptomycin

Time in Relation to Treatment	Isolation of A. Aerogenes	Susceptibility * to Streptomycin † Micrograms/Cc.
Before treatment	Many	1.0
After treatment started ‡		
6 hours after	Few	2.0
12 hours after	None	
18 hours after	None	
24 hours after	Moderate number	>1,000.0
2 days after	Many	>1,000.0
After treatment stopped		
1 day after	Many	>1,000.0
6 months after	Many	>1,000.0

* Case 1.
† Smallest concentration inhibiting growth.
‡ 1.0 Gm. per day for five days.

Cultures were done on six-hour specimens of urine during the first day of treatment and then daily on twenty-four hour specimens. Only the second and third six-hour specimens collected during the first day of treatment were sterile. All specimens subsequently collected contained A. aerogenes (see the accompanying table). Isolations of the organism made during and after treatment were saved and later tested for susceptibility to streptomycin. All isolations obtained twenty-four hours after therapy was instituted were resistant to 1,000 micrograms of streptomycin. Blood levels of the agent varied between 7 and 10 micrograms per cubic centimeter. Levels in the urine varied between 280 and 2,000 micrograms per cubic centimeter.

The patient experienced two subsequent bouts of spiking fever with chills. Two further courses of penicillin therapy were administered, during which tidal drainage with acriflavine was continued. Subsequent to ten days of normal temperature, the patient was discharged from the hospital about three months after admission. Improvement in the neurologic condition was not observed during hospitalization. A specimen of urine collected six months after discharge still showed A. aerogenes on culture.

CASE 2.—J. M., a man aged 55, had stones in the right kidney and recurring pyelitis of several years' duration. Surgical intervention was recommended but was not done. Two months before his death, the patient had lobar pneumonia, which responded successfully to penicillin therapy. On recovery, however, pyelitis recurred, and the patient became toxic, with a temperature of 103 F., chills, sweats and hiccups; the leuko-

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Streptomycin was secured through the courtesy of Dr. J. M. Carlisle of Merck & Co., Inc., Rahway, N. J.

From the Department of Bacteriology and the Department of Medicine, Temple University School of Medicine. On duty with United States Public Health Service (Dr. Ottenberg) and at Hahnemann Medical College (Dr. Brown).

[1] Vivino, J. J., and Spink, W. W.: Sulfonamide Resistant Strains of Staphylococci: Clinical Significance, Proc. Soc. Exper. Biol. & Med. **50:** 336-338, 1942. Spink, W. W.; Hall, W. H., and Ferris, V.: Clinical Significance of Staphylococci with Natural or Acquired Resistance to the Sulfonamides and to Penicillin, J. A. M. A. **128:** 555-559 (June 23) 1945. Sulfadiazine Resistant Strains of Beta Hemolytic Streptococci, [illegible] 1. **129:** 921-927 (Dec. 1) 1945. Damrosch, [illegible] d Sulfonamide Resistant Streptococci, ibid. [illegible]

[illegible] id Maxon, T.: Resistance of Staphylococcus Aureus to the Action of Penicillin, Proc. Soc. Exper. Biol. & Med. **51:** 386-389, 1942. Waisman, M., and Gates, J. S.: Topical Penicillin Treatment of Pyogenic Infections of Skin, Bull. U. S. Army M. Dept. **4:** 516-517, 1945. Hamilton, J. E.; Prandoni, A. G.; Evans, J. M., and Romansky, M. J.: Penicillin Therapy of Infections in Two Hundred and Twenty Patients: A Clinical and Bacteriologic Study, Surgery **19:** 186-219, 1946. Yow, E.; Avera, J.; Harrell, G. T.; Palmer, J. G., and Taylor, R. W., Jr.: Prediction of the Requirements Necessary for Effective Penicillin Therapy: Comparison of In Vitro and In Vivo Response to Penicillin in Acute and Chronic Infections of Varied Etiology, South. M. J. **39:** 236-245, 1946.

[3] Buggs, C. W.; Bronstein, B.; Hirshfeld, J. W., and Pilling, M. A.: In Vitro Action of Streptomycin on Bacteria, J. A. M. A. **130:** 64-67 (Jan. 12) 1946. Youmans, G. P.; Williston, E. H.; Feldman, W. H., and Hinshaw, H. C.: Increase in Resistance of Tubercle Bacilli to Streptomycin: A Preliminary Report, Proc. Staff Meet., Mayo Clin. **21:** 126-127, 1946. Alexander, H. E., and Leidy, G.: Influence of Streptomycin on Type B Haemophilus Influenzae, Science **104:** 101-102, 1946.

cytes numbered 25,000. Blood cultures were negative but cultures of urine contained enterococci and many A. aerogenes.

The culture of A. aerogenes which had been isolated was tested for susceptibility to streptomycin, and growth was inhibited by 0.5 microgram (0.5 unit) per cubic centimeter of culture medium. Streptomycin therapy was started on the ninth day after the recurrence of pyelitis. Two grams of the drug (2,000,000 units) was administered the first day by continuous intramuscular drip and 1 Gm. per day thereafter for fourteen days, making a total dosage of 15 Gm. Some general improvement in the patient was noted, but fever persisted and the temperature never returned to normal. Streptomycin levels were not computed on blood or urine. Cultures of the urine one week after streptomycin therapy was discontinued contained many A. aerogenes. Growth of the organisms isolated at this time was not inhibited by 1,000 micrograms per cubic centimeter of broth. The patient died of sepsis ten days after a nephrectomy was performed.

COMMENT

It is apparent that the failure of streptomycin to control the infection of the urinary tract in the 2 cases reported herein was due to the development of resistance to this agent by the strains of A. aerogenes causing the infections. In case 1 the development of resistance to streptomycin was rapid and occurred during the first twenty-four hours of treatment. Because the patient in case 2 was treated at some distance from the laboratory, cultures were not made during the period of treatment; hence, unfortunately, the speed with which the organisms became resistant was not determined. There is little doubt that the resistant strains isolated in both cases were variants of the original susceptible cultures. The resistant variant in each case was identical with the parent strain morphologically, culturally and biochemically.

In a study of the development of resistance to penicillin by staphylococci, Demerec[4] concluded that development of resistance to this agent by staphylococci is the result of natural selection. Klein and Kimmelman[5] more recently came to the same conclusion concerning the development of the streptomycin resistance of shigella. According to the concept of these two workers, the resistant strains of A. aerogenes which were isolated in the cases reported above were present in the parent culture of each strain. Because they were present in such few numbers, however, they were not detected by conventional methods of susceptibility testing wherein small inoculums are tested. When treatment was instituted, the susceptible cells were immediately eliminated, leaving only the few resistant forms which multiplied rapidly until the entire population consisted solely of resistant cells. We are in accord with this reasoning in view of the rapidity with which resistance developed, a process which is more consistent with that of natural selection than with that of acquired resistance.

Proof that resistant cells were present in one of the original susceptible cultures was obtained by testing the susceptibility of a large population of the culture. A total of 5 cc. of broth culture of each strain of A. aerogenes was plated in a series of agar plates containing 500 micrograms of streptomycin per cubic centimeter of agar. Not a single colony developed on the plates inoculated with strain J. M. (case 2). On the plates inoculated with strain F. V. (case 1), however, two colonies developed which on subsequent testing were not inhibited by 1,000 micrograms of the drug. It appears that of the approximately 5 billion cells of this strain tested there were two resistant variants. It is obvious that if a smaller population had been tested these resistant variants would not have been detected. No doubt strain J. M. likewise has similar resistant variants, but still larger populations must be tested before they are detected.

It is significant that the resistant variants which were isolated remained permanently resistant. An isolation of A. aerogenes from patient F. V. (case 1) made six months after streptomycin therapy was discontinued was still resistant. Furthermore, all resistant strains stored in the laboratory on extract agar slants still retained their resistance nine months after isolation.

Streptomycin has not had sufficient clinical trial as yet to justify conclusions in regard to its future chemotherapeutic value. It appears at present, however, that it will be of value in the treatment of tuberculosis[6] and certain infections due to gram-negative bacilli.[7] It is evident, nevertheless, that the rapid development of resistance to this agent by organisms in the body under treatment is a serious problem which the therapeutist must bear in mind. It may become necessary for the laboratory to devise susceptibility tests of such a nature that the probability of an organism developing resistance will be predictable. It should not be assumed that all strains of A. aerogenes or other susceptible organisms will become resistant to streptomycin as readily as did those in the 2 cases reported. Doubtless bacteria differ in their tendency to give rise to naturally resistant variants as shown recently by Knop.[8] It is interesting to note that by transferring the two parent strains of A. aerogenes each daily in broth which contained increasing concentrations of streptomycin relatively few passages were required before the two became extremely resistant.

Until an answer is found to this problem it appears that large dosages of this agent should be used. It is conceivable in the 2 cases reported that if the entire dosage had been given in the course of one or two days the response might have been more favorable. Such intensive therapy would have tended to eliminate the few resistant variants as well as the susceptible forms. The answer to this problem may eventually be the therapeutic use of some other agent, such as penicillin or a sulfonamide compound, along with streptomycin. Combined therapy may prevent the appearance of such resistant variants to either agent.[9]

SUMMARY

In 2 cases of infection of the urinary tract due to Aerobacter aerogenes streptomycin therapy was unsuccessful. The ineffectiveness of this agent was due to the development of streptomycin-resistant variants of the two strains of A. aerogenes causing the infections. The resistant variants in both cases were over a thousand times more resistant than their susceptible parent cultures.

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Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association
and Hygeia, the Health Magazine
Chicago

CHAPTER 1. *The Organization Is Conceived*

(NOTE: *Following is the first chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of THE JOURNAL. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in THE JOURNAL. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—ED.)

The first meeting of the American Medical Association was in May 1847 in the city of Philadelphia. The assemblage did not gather by any common impulse arising suddenly in the minds of a great number of men. The birth of the Association followed travail of many months; the pains, the jealousies and the love associated with its conception forecast the great career to be achieved by this extraordinary progeny.

A medical society was formed in New York in 1749, almost a hundred years previously. The first medical book to be published on the North American continent had been printed by the Spaniards in Mexico in 1570 and they had founded the first medical school in 1578. The only medical publication of the New England colonies in the seventeenth century was Thatcher's "Brief Rule," printed in Boston in 1677. John Shaw Billings in his notable "A Century of American Medicine" says there were at the commencement of the Revolutionary War but one medical book by an American author, three reprints and twenty pamphlets.

Before 1800 there were five good medical schools—those of the University of Pennsylvania (1765), Kings College (1767), New York, which became in 1792 the Medical Faculty of Columbia College, Harvard University (1782), the College of Philadelphia (1790) and the Medical School of Dartmouth College (1798). Small medical societies had been [illegible] in Boston in 1735 and others in New [illegible] and New Haven County. State medical societies existed in New Jersey, Massachusetts, South Carolina, Delaware, New Hampshire, Connecticut and Maryland. The medical periodicals of the country were few in number and of small circulation, the first being the *Medical Repository* of New York, founded in 1797.

With the nineteenth century medicine began to make more progress through the development of interesting devices and new theoretical concepts. Advances made in physics and chemistry were reflected, as they are today, in medicine, but the modern scientific movement did not attain full proportions until well after the middle of the century. No doubt the discovery of anesthesia in 1846 was the most important single contribution to the advancement of medical science in those first fifty years of the nineteenth century. True, the period saw the introduction of vaccination against smallpox, the discovery of the stethoscope by Laënnec, the publication of Percival's "Code of Medical Ethics," the first ovariotomy, performed by Ephraim McDowell, the publication of the first United States Pharmacopeia (1820) and such amazing clinical contributions as Bell's description of the functions of the spinal nerve roots, Parkinson's description of paralysis agitans, Hodgkin's description of lymphadenoma, Beaumont's classic experiments on digestion, Basedow's description of toxic diffuse goiter and Oliver Wendell Holmes's essay on the contagiousness of puerperal fever. Rokitansky and Virchow had begun the fundamental studies in pathology which were to be the basis of a modern science of medicine in contrast to a century of medical art. Claude Bernard had already written a significant essay on the digestive function of the pancreas.

Then came 1847. In his "History of Medicine" Fielding H. Garrison lists as the most important accomplishments of that year Helmholtz's treatise on "Conservation of Energy," the introduction by Sir James Simpson of chloroform anesthesia in obstetrics, the Semmelweis discovery of the cause of puerperal fever, the invention by Carl Ludwig of the kymograph and the founding of the Royal Academy of Sciences of Vienna and of the American Medical Association in Philadelphia.

What better source could we ask for the history of the American Medical Association from its organization up to January 1855 than Dr. Nathan Smith Davis, who, more than any other man, may be credited with being the founder of the American Medical Association? He records the incidents in his book published in 1855 in Philadelphia. At that time he said:

> Of all the voluntary social organizations in our country, none are at this time in a position to exert a wider or more permanent influence over the temporal interests of our country than the American Medical Association. This assertion may startle the mind of the professional reader and call forth a smile of incredulity, nay of contempt, from the nonprofessional; but let both patiently follow me to the end and then judge. I am aware that the details on which I am about to enter may appear to some unimportant, to others tedious and, to all of the present generation, wanting in novelty and interest; but they will appear far otherwise to those who shall come after us and live when time shall have thrown his dimming veil over all the doings of our day.

During the fifteen years between 1830 and 1845 the number of medical colleges in the United States more than doubled. There was active rivalry and competition without restraint. Because of the commercial character of these medical schools, the promoters sought by shortening of the curriculum and by the establishment of easy terms of graduation to induce great numbers of students to enter and to pay the fees. Sixteen weeks was generally adopted as the length of the college term; in some schools, it was reduced to thirteen. In New England attempts had been made to improve on this wholly inadequate curriculum. In 1835, the Faculty of the Medical College of Georgia proposed that a convention be called of delegates from all the medical colleges in the United States with a view to standardizing upward. Some of the more influential schools in the Atlantic cities, as might have been anticipated, opposed this effort. But a cry arose again in the Medical Society of the State of New York at its annual meeting in February 1839. At that time a resolution declaring that the business of teaching should be separated as far as possible from the privilege of granting diplomas was adopted by a large majority.

Following the adoption of this resolution, Dr. John McCall of Utica offered a preamble and a resolution urging a national medical convention to be held in 1840 in Philadelphia with delegates from each state medical society and each medical school in the United States. The resolution was adopted, and all the necessary steps to make it effective were taken. Then neither the societies nor the schools of other states responded to the invitation. The evil persisted, and the tension accumulated during the years that followed. In 1844 a series of resolutions were offered by Dr. Alexander Thompson of Cayuga County and N. S. Davis of Broome County attacking the abuse of the procedure by which college faculties both taught and licensed medical students and attacking as well the brief course of education leading to the receipt of a diploma. In 1845 the discussions in the state society continued; but the pattern of thinking seems to have been as stereotyped as it is now whenever improved standards are urged in any branch of education. Those who wished to set up a high standard in New York were told that students would abandon the schools of New York for those of other states where the requirements were less. The statement was made again and again that the requirements in New York were certainly as high as those of other states. At the close of the debate in 1845 Dr. Nathan Smith Davis, urged by Dr. Alden March of Albany, introduced the resolution which follows and which may be considered the first step toward the formation of the American Medical Association as we know it now:

> WHEREAS, It is believed that a national convention would be conducive to the elevation of the standard of medical education in the United States; and
>
> WHEREAS, There is no mode of accomplishing so desirable an object without concert of action on the part of the medical colleges, societies and institutions of all the states; therefore be it
>
> *Resolved,* That the New York State Medical Society earnestly recommends a national convention of delegates from medical societies and colleges in the whole Union to convene in the city of New York on the first Tuesday in May in the year 1846 for the purpose of adopting some concerted action on the subject set forth in the foregoing preamble.
>
> *Resolved,* That a committee of three be appointed to carry the foregoing resolution into effect.

The introduction of this resolution was followed by a discussion in which the older members of the society told how similar movements had failed in the past. Others said that the whole project was impracticable if not positively utopian. But Nathan Smith Davis persisted and urged those who agreed with him to persevere until they achieved success. The resolution was adopted; a committee consisting of Drs. Nathan Smith Davis of Binghamton, James McNaughton of Albany and Peter Van Buren, secretary of the state society, were named to make the resolution effective.

To what, then, can be ascribed the success of this resolution compared with the repeated failures of previous attempts to found a national medical society? The persistence and courage and initiative of Dr. N. S. Davis were the essential factors. Dr. Nathan Smith Davis soon after his return to Binghamton sent a copy of the preamble and resolutions to every college and medical society known to exist in the United States and to many prominent physicians in sections of the country in which such societies had not yet been formed. The proposal met with favor from societies, colleges and individuals by whom it was received except the colleges located in Philadelphia and in Boston. These schools respectfully declined to take any part in the proposed convention. The medical periodicals of the country, however, commended the holding of such a convention. Dr. Davis continued indefatigably to urge support of his project.

The New York State Medical Society in February 1846 appointed sixteen delegates to attend and accepted the invitation of the Faculty of the New York University to hold the convention in their building in May of that year. With an organizational genius equal to the best modern technics, Dr. N. S. Davis sent more communications to the medical periodicals of the country during 1845. He was aided by similar communications from Dr. Luther Ticknor, then president of the Medical Society of the State of Connecticut. Whereas Dr. Davis emphasized particularly the improvement of medical education, including higher standards of preliminary education, the quality of teaching, the qualifications required for a diploma and continuous stimulus of the medical profession, Dr. Ticknor urged quality in medical practice and graduate education and deprecated particularly the rivalry among the medical institutions and leading medical men as to who should furnish "not the most valuable and best wrought article, but who shall furnish the greatest quantity." So strong indeed were the language and the assertions of Dr. N. S. Davis that they naturally stimulated some opposition.

Professor Martyn Paine of the medical department of New York University delivered an address called "A Defense of the Medical Profession of the United States," published it and circulated it widely throughout the country. In this address he attacked the state medical society, accusing it of playing politics in its desire to extend the curriculum and said:

> There is an aristocratic feature in this movement of the worst omen, however the spirit, by which it is prompted, may belong to the agrarian policy. It is oppression toward the poor for the sake of crippling the medical colleges.

This address had the strange effect of causing the Philadelphia physicians to withdraw their previous rejection of the invitation to New York on the grounds that "the very singular address of Professor Paine" convinced them that the "convention was not designed particularly to benefit the medical schools in the city of New York." As a result, the society was convened in Philadelphia and twelve eminent physicians were appointed to attend the meeting in New York. In his book Dr. N. S. Davis philosophizes on this incident as exemplifying the necessity for frequent contacts between leaders in order to overcome distrust and bring about mutual respect. He says:

> It would be difficult to illustrate more strikingly that sleepless jealousy which pervaded more or less all our medical schools, springing into existence in rapid succession, as they had done; or the necessity of some general organization, by which the representatives of all should be brought into personal contact and intercourse, until mutual distrust should give place to mutual respect and a common object.

THE ORGANIZATIONAL MEETING

On Tuesday, May 5, 1846 the delegates and members of the medical profession from different parts of the United States assembled in the hall of the Medical Department of the New York University. Dr. Edward Delafield of New York was in the chair. Dr. William P. Buel of New York was appointed secretary. On motion a committee of one from each state represented in the convention was appointed to nominate officers for the convention. This committee unanimously agreed to propose for president Dr. Jonathan Knight of New Haven, for vice presidents Dr. John Bell of Philadelphia and Dr. Edward Delafield of New York City, and for secretaries Dr. Richard D. Arnold of Savannah, Ga., and Dr. Alfred Stillé of Philadelphia.

The Committee on Credentials reported that 119 delegates had sent credentials and that 80 of these were present at the opening of the convention. They represented medical societies and colleges from sixteen different states. No sooner had the officers been elected and conducted to their respective places than there occurred one of the most extraordinary political moves that has ever marked a medical assemblage anywhere in our country, which, incidentally, is widely known for the exciting activities of its democratic assemblages. Dr. Gunning S. Bedford, a colleague of the previously mentioned Professor Martyn Paine, arose and, after some general remarks as to the benefits of a general convention of medical men, introduced a resolution to the effect that the assemblage had failed in representation from half the United States and from a majority of the medical colleges and that therefore "this convention adjourn *sine die*." The proposition was immediately seconded by one of his associates and naturally took the convention by surprise. There were two minutes of silence. The question was called for and a vote being taken gave 2 voting "Yes," namely Dr. Gunning S. Bedford and his colleague Dr. G. S. Pattison, and 74 "No."

Since many of the members considered the resolution an insult, motions were promptly made to withdraw the convention from the hall of New York University. This was followed by explanations and apologies by Drs. Bedford and Pattison; then the proposed withdrawal was laid on the table.

A committee of nine was appointed—headed by Dr. N. S. Davis—to bring the subject of medical education before the convention in the form of distinct proposals suitable for discussion and action and to report at the next meeting. On the following day this committee presented to the convention the following four proposals:

> First. That it is expedient for the medical profession of the United States to institute a National Medical Association.
>
> Secondly. That it is desirable that a uniform and elevated standard of requirements for the degree of M.D. should be adopted by all the medical schools in the United States.
>
> Thirdly. That it is desirable that young men, before being received as students of medicine, should have acquired a suitable preliminary education.
>
> Fourthly. That it is expedient that the medical profession in the United States should be governed by the same code of medical ethics.

The committee also recommended the appointment of a committee of seven "to prepare and issue an address to the different regularly organized medical societies, and chartered medical schools in the United States, setting forth the objects of the National Medical Association, and inviting them to send delegates to the Convention to be held in Philadelphia in May 1847."

The proposals were adopted by the convention and the committees were appointed.

At this same meeting Dr. Davis tried to introduce—and received support for—a resolution to the effect that the union of the business of teaching and licensing in the same hands is wrong in principle and liable to abuse in practice. The resolution was opposed by Dr. Isaac Hays and by other members of the committee and finally was presented to the convention. Here it was fully discussed, and motions were made to lay it on the table or to refer it to various committees, but the spirited defense by Dr. N. S. Davis resulted finally in reference of the resolution to a special committee of seven, with instructions to report it at the meeting to be held in Philadelphia in May 1847.

This assemblage of physicians did not lose the opportunity to make progress toward greater efficiency in the science of medicine. On motion of Dr. John H. Griscom, committees were appointed to report on the most efficient measures for effecting a registration of births, marriages and deaths and toward the establishment of a nomenclature of diseases adapted to the United States.

Dr. N. S. Davis, looking over this epoch-making meeting in retrospect, expresses his surprise at the disparity of representation from states located equally distant from the place of meeting. New Jersey, for instance, had only two delegates, Maryland only one and Georgia only one. Indiana and Illinois had only one delegate each, so that more than half of the entire number present represented the state of New York. Eleven medical colleges were represented, which were only one third of the whole number in the United States. Again in retrospect, Nathan Smith Davis was disappointed by the absence of those to whom the medical profession had been accustomed to look as leaders in all important professional matters. He calls attention to the absence of such men as Warren, Mussey, Stevens, Chapman, Drake. Later most of these were to become quite active in the work of the medical association and some of them were elected to the presidency.

(To be continued)

Clinical Notes, Suggestions and New Instruments

ACUTE INFECTIOUS LYMPHOCYTOSIS IN AN ADULT

Review of Literature and Report of Case

ANTON S. YUSKIS, M.D.
San Diego, Calif.

Acute infectious lymphocytosis is a clinical entity characterized by a benign relative and absolute increase in the number of mature lymphocytes. This condition was first described by Smith[1] in 1941. He expressed the opinion that the group of cases reported by Reyersbach and Lenert[2] and that by Wilson and Cunningham[3] were examples of this disease rather than of infectious mononucleosis, because there were no significant clinical signs or symptoms in any of these cases. Thelander and Shaw[4] also reported 2 cases that should have been classified as acute infectious lymphocytosis. Duncan[5] reported a case of infectious lymphocytosis that presented a definite symptomatology and Smith[6] recently reported 4 cases in which he considered the disease to be both infectious and contagious. Birge and Hill[7] reported a differentiation between leukemia, mononucleosis and pertussis. They stated that the only change observed in the aspirated bone marrow was a slight increase in small lymphocytes, and that immature cells appeared in the peripheral blood in acute leukemia but not in acute infectious lymphocytosis. For the diagnosis of pertussis in the absence of characteristic physical observations, bacteriologic studies should be an aid, since the lymphocytic response to infection produces fewer cells than are apparent in acute infectious lymphocytosis.

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[1] Smith, C. H.: Infectious Lymphocytosis, Am. J. Dis. Child. **62:** 231-261 (Aug.) 1941.

[2] Reyersbach, G., and Lenert, T. F.: Infectious Mononucleosis Without Clinical Signs or Symptoms, Am. J. Dis. Child. **61:** 237-244 (Feb.) 1941.

[3] Wilson, C. P., and Cunningham, R. S.: Consideration of Supravital Method of Studying Blood in Cases of Mononuclear Cell Response, Folia haemat. **38:** 14-29 (March) 1929.

[4] Thelander, H. E., and Shaw, E. B.: Infectious Mononucleosis with Special Reference to Cerebral Complications, Am. J. Dis. Child. **61:** 1131-1145 (June) 1941.

[5] Duncan, P. A.: Acute Infectious Lymphocytosis, Am. J. Dis. Child. **66:** 267-271 (Sept.) 1943.

[6] Smith, C. H.: Acute Infectious Lymphocytosis: Specific Infection, J. A. M. A. **125:** 342-349 (June 3) 1944.

[7] Birge, R. F., and Hill, L. F.: Acute Infectious Lymphocytosis, Am. J. Clin. Path. **15:** 508-512 (Nov.) 1945.

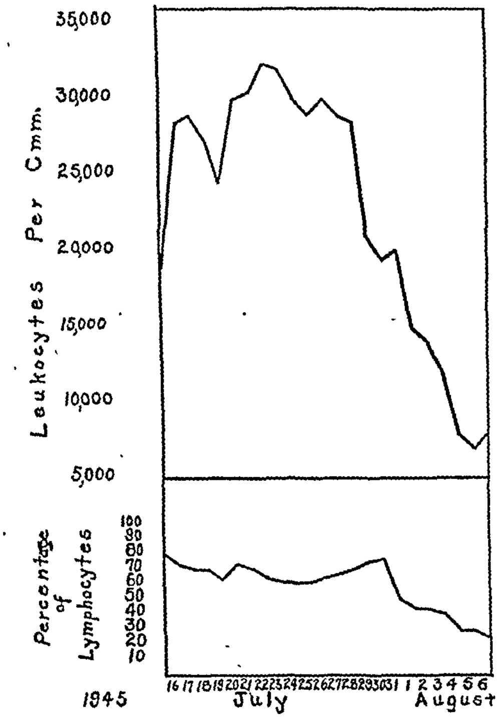

Chart 1.—Hematologic data; increase in the number of mature lymphocytes.

All the cases which were reported occurred in children under the age of 9, until Duncan[8] in 1945 reported 2 cases occurring in young adults. The purpose of this report is to present a case also which occurred in an adult.

REPORT OF CASE

History.—A man aged 29, a recruit in a Naval Training Center, reported to the dispensary on July 16, 1945 complaining of a moderately severe pain in his right side which occurred after his training on the obstacle course. He received diathermy and salicylates for the next three days with but slight improvement, and the pain had shifted to his right hip. A white cell count, a urinalysis and a roentgenogram were requested, and the laboratory reported a normal urinalysis and a white blood cell count of 19,200 with a differential count of 80 per cent mature lymphocytes, 18 per cent neutrophils and 1 per cent each of eosinophils and basophils. Because of the hematologic observations he was admitted to the dispensary for observation.

Several days before his induction into the service on July 5, 1945 the patient noted a rash that had occurred below the belt line and covered the lower part of the abdomen, both hips, thighs and legs. Otherwise, the past history was noncontributory.

Physical Examination.—On physical examination, the patient was a well developed, well nourished white man who appeared much older than his stated age of 29. The temperature, pulse rate, respiratory rate and blood pressure were normal. The rash which was still present on his hips, thighs and legs consisted of a symmetric red maculopapular eruption, grouped together in places to form irregularly shaped lesions which became confluent, especially over the tibial surfaces. Itching was absent. The head, neck, chest and abdomen were normal. The lymph glands were not enlarged, and the spleen and liver were not palpable.

Laboratory Data.—Roentgenograms of the chest, pelvis and femurs were negative. Urinalysis was normal and the heterophil agglutination tests were positive in a dilution of 1:8. The blood platelet count was normal as was the electrocardiogram. The sedimentation rate was 8 mm. (Cutler method). Repeated determinations of the erythrocyte count which averaged 4,630,000 and the hemoglobin content which averaged 14.8 Gm. were well within normal limits. The proportion of large mononuclear cells never exceeded 3 per cent. The bleeding and clotting times of the blood were normal. The only significant hematologic observation was the increase in the number of mature lymphocytes as shown in chart 1.

Course.—While in the dispensary the patient did not have any complaints. The rash disappeared two days after admission, and he was returned to duty on Aug. 6, 1945. Eleven days later on Aug. 17, 1945 he was readmitted to the dispensary because of a mild infection of the upper part of the respiratory tract—headache, sore throat, cough and an elevation of temperature to 101 F. without other abnormal observations. His condition improved immediately, and he was returned to duty about one week later. The hematologic data during this time and at subsequent dates are shown in chart 2.

The patient finished his "boot training" and after he returned from his "boot leave" a complete physical and laboratory examination on Oct. 17, 1945 failed to reveal any abnormalities.

COMMENT

Smith[6] recently summarized the data for the establishment of acute lymphocytosis as a specific entity and differentiated it from infectious mononucleosis, acute lymphatic leukemia and miscellaneous infections associated with a lymphocytosis.

Most of the reported cases have been in children until Duncan[8] reported 2 cases occurring in young adults. In this same report, Duncan had a case in which there was a morbilliform rash lasting for four days during the first week of the disease. In this case the rash which was present lasted about twenty-one days. Because of this rash, a diagnosis of infectious mononucleosis was seriously considered, but a careful clinical, hematologic and serologic study failed to substantiate this diagnosis and corroborated the factors of differentiation which were stressed by Smith.[6]

In most of the cases, including this case, reported in the literature, the disease is uncomplicated and has a uniformly favorable outcome. The clinical manifestations are usually mild or absent, or if severe they are of short duration. In none of the cases was there lymphadenopathy or splenomegaly, and in all instances the heterophil reaction was negative. The maximum white cell count was 49,200 with 88 per cent lymphocytes. A characteristic feature in all cases, including this one, is either

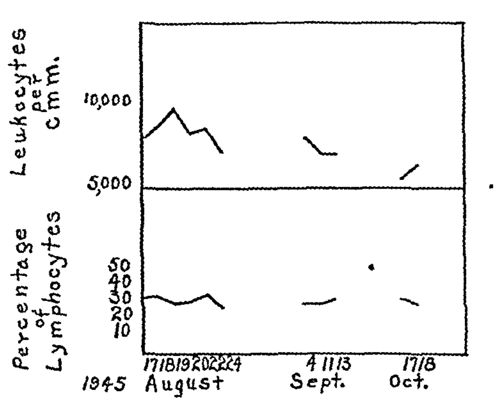

Chart 2.—Hematologic data during and subsequent to second hospitalization.

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[8] Duncan, P. A.: Acute Infectious Lymphocytosis in Young Adults, New England J. Med. 233: 177-179 (Aug. 9) 1945.

the total absence of symptoms and physical signs or the short duration of mild symptoms and signs with the hyperleukocytosis continuing for a period of approximately three to five weeks. In some cases pain is present and may represent a striking symptom, and if it is, abdominal surgical intervention may result. In this case the pain was moderately severe but was never considered a basis for surgical intervention.

Smith[6] in his latest report stated that the disease is both infectious and contagious and has a possible incubation period of twelve to twenty-one days. In this case several friends of the patient from his company were questioned and examined but did not reveal any abnormality, particularly from the hematologic examination.

SUMMARY

1. A case of acute infectious lymphocytosis has occurred in a young adult.
2. A rash which accompanied the infection is described as similar to that previously reported for the first time in conjunction with this disease.
3. A review of the present literature on acute infectious lymphocytosis indicates that the disease is infrequently encountered.

3118 El Cajon Boulevard.

PROGERIA WITH NANISM AND CONGENITAL CATARACTS IN A FIVE YEAR OLD CHILD

ROBERT C. MOEHLIG, M.D.
Detroit

Progeria with nanism is infrequently encountered in practice, and its association with congenital cataract is most unusual.

The following is a case report of this disease associated with congenital cataracts.

REPORT OF CASE

W. H., a boy aged 5, was seen March 27, 1944, at the request of Dr. E. Alford of Belleville, Mich.

He was born two months prematurely, on July 27, 1938. Through the kindness of Dr. Otto Grob, I was furnished with the important points taken from his own records and those of the Children's Hospital of Michigan.

The weight at birth was 3 pounds 2 ounces (1,366 Gm.) and the length was 44 cm. The circumference of the head was 25 cm. The nose was pointed. The infant was discharged on September 15 and readmitted October 24 because of diarrhea and difficulty with feeding. He was given protein, calcium lactate, percomorph and ammonium citrate and green iron.

Comparison of Normal Measurements With Those of Patient

	Measurements in Cm.	
	Normal	Patient
Head	52.0	47.0
Chest	48 0	46.3
Waist	52.0	44.0
Span	105.0	94.0
Upper	59.0	50.8
Lower	49.5	45.7
Height	109.0	96.5
Weight	18.0 Kg.	12.0 Kg.

Dr. Davies, the ophthalmologist, who saw the infant in consultation summarized the observations as follows: The external eyes were negative except for a bluish tint to the scleras and shallow anterior chambers. The tactile tension was normal. Both lenses showed decided cataractous changes through undilated pupils. Only a faint fundus reflex was seen. The diagnosis was bilateral congenital cataracts.

The roentgenologic report disclosed that the long bones were relatively long and thin with a rather delicate cortex, and except for the humeri the cortex was not reduced enough for an absolute diagnosis of fragilitas ossium. The calcification of the cranial bones was delicate. The chest was normal.

On October 30, Dr. O. Grob made note of bilateral congenital cataracts. A week earlier, on Oct. 24, 1938, the hemoglobin level had been 9.3 Gm. per hundred cubic centimeters; erythrocytes 3,060,000, and leukocytes 6,100, of which 84 per cent were lymphocytes. The Kline test was negative.

When Dr. Grob saw the patient again on Oct. 30, 1939, he weighed 5,800 Gm. Dr. Grob made the following observations: (1) Very small; (2) congenital cataract, bilateral; (3) marked nasal obstruction; (4) low mentality? and (5) child has blue spells and holds his breath.

The teeth came in slowly when the boy was 3 years of age; when he was seen at the age of 5, they were small, undeveloped and had a well defined deposit of calcium on the crowns.

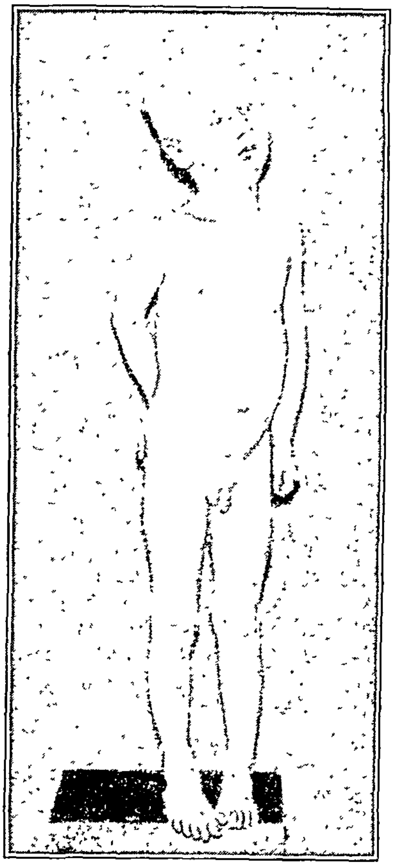
Fig. 1.—Front view of patient; typical characteristics of progeria.

He was mentally retarded, but the intelligence quotient was not determined. He used only one or two words at a time when speaking. He did not sit up alone until the age of 16 months. He was unusually hungry, but despite this his growth and weight were retarded. He walked soon after learning to sit up.

At the age of 3, he began to play the piano without having had lessons and played such numbers as Song of India and Turkey in the Straw. The mother said he could play any song after hearing it once. He was constantly drooling. He was impish and mischievous. He frequently held the flat of his right hand in front of his eyes and with a rapid motion kept the hand moving up and down.

Dr. F. Bruce Fralick of the University of Michigan Hospital reported on the patient as follows:

W. H. was first seen in the clinic on June 2, 1942. At this time, diagnoses were made of aphakia of the left eye and nystagmus, congenital cataract of the right eye and left divergent strabismus. On July 1, 1942, needling of the congenital

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From the Department of Medicine, Harper Hospital, and Wayne University College of Medicine.

cataract was performed on the right eye. The postoperative course was uneventful and on July 15 the eye was seen to be quiet, with the cortical material dissolving satisfactorily. There was a thin secondary cataract present with one or two small posterior synechias. Fundus details were not clear at this time. He was given a prescription for plus 10.00 sphere for each eye with a plus 2.50 added for near vision. He has not been seen in the clinic since that time.

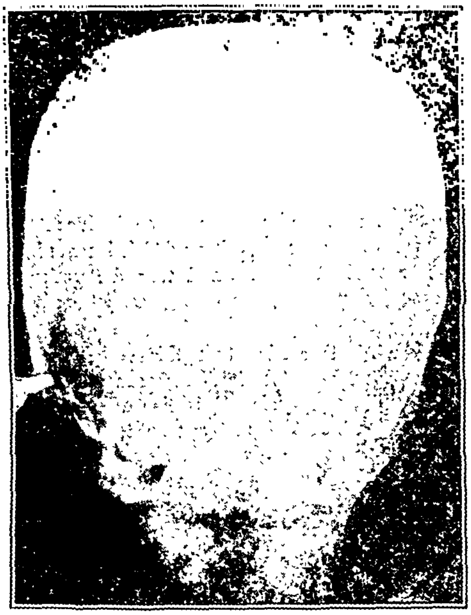

Fig. 2.—Roentgenogram of skull, anteroposterior view; incomplete closure of sagittal and lambdoidal sutures.

The past history disclosed that the patient had none of the usual childhood diseases. The family history indicated that the father was living. His height was 76 inches (193 cm.) and his weight 165 pounds (74.8 Kg.). The mother was living and her height was 64 inches (162.56 cm.) and her weight 120 pounds (54.4 Kg.) She had had a thyroidectomy for an adenoma of the thyroid. A paternal uncle was, like the father, 76 inches (193 cm.) in height. A paternal cousin of the patient also was of the same height and weighed 289 pounds (131 Kg.). There were three brothers, one of whom grew "too fast." The mother's father was 72 inches (182.88 cm.) in height.

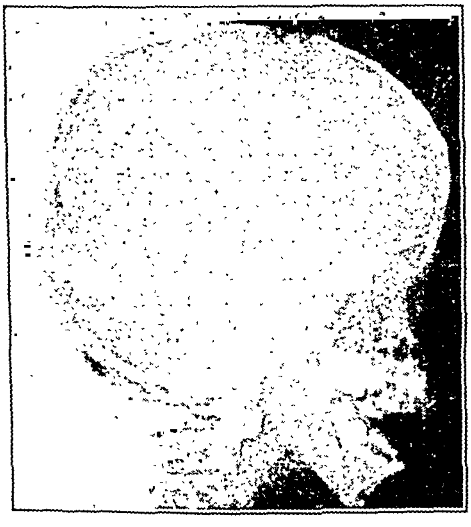

Fig. 3.—Roentgenogram of skull, lateral view.

The physical examination showed a boy who had a definitely senile appearance, typical of progeria (fig. 1). The face had the characteristics of a "newly hatched bird." The hair of the scalp was sparse and blond, with baldness of the frontal area. The veins of the temporal area were prominent. The eyebrows were poorly developed and were almost totally absent. The eye lashes were absent. The upper part of the ears protruded from the head; the lower part was flat.

The blue eyes showed a constant horizontal nystagmus which was doubtless congenital. The left eye showed aphakia. The right eye displayed a left divergent strabismus.

The nose was aquiline in appearance; the septum was deviated. The mouth was small and purselike. The boy drooled a great deal. The teeth were unusually small and carious and had a thick white deposit on them. The hard palate was of the high arched cathedral type. The tongue was normal in appearance. The tonsils were large. The cervical glands were enlarged. The thyroid was small. The chest was small and asthenic. The lung sounds were normal.

The heart was not enlarged, but a loud systolic murmur was heard at the apex. The abdomen was prominent; abnormal masses were not felt. Umbilical hernia was not present. The testicles were high up in the inguinal canal. The penis was small. Pes planus was present. The skin of the face was taut and dry, as was the skin of the body. The fingers and toes were small. The patellar reflexes were exaggerated. A questionable bilateral Babinski reflex was present. The accompanying table gives the patient's measurements.

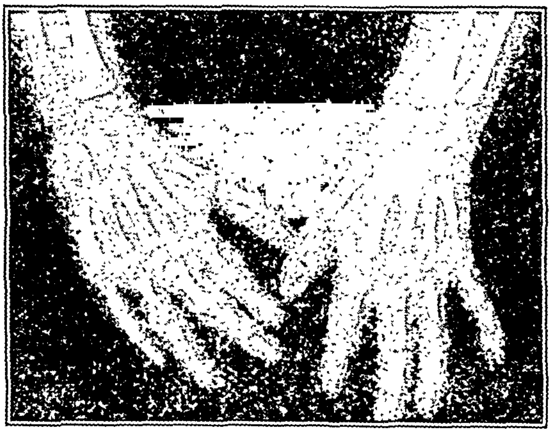

Fig. 4.—Roentgenograms of hands and wrists; osteoporosis of bones.

Roentgenograms of the skull, hands and wrists revealed the following data: The skull on examination showed that the fontanel was closed although the sutures, both sagittal and lambdoidal, were not completely fused. There was a metopic suture of the frontal bone (figs. 2 and 3).

Films of the hands and wrists revealed no material disturbance in epiphysial development, but there was definite disturbance in the bony architecture, particularly of the phalanges and metacarpals. The bones were osteoporotic (fig. 4).

The blood count was hemoglobin 78 per cent (Sahli), red blood cells 4,350,000 per cubic millimeter and leukocytes 11,450. The differential count was polymorphonuclear neutrophils 72 per cent, small lymphocytes 27 per cent and large lymphocytes 1 per cent. The results of urinalysis were normal. No blood chemistry studies were made, and the observations are therefore clinical in nature.

The patient was placed on a regimen of methyl testosterone 10 mg. per day, and on July 10 his height was 40 inches (101.6 cm.) and his weight was 30 pounds (13.6 Kg.). He was continued on this therapy, and on Jan. 6, 1945 his height was 41.4 inches (105 cm.) and his weight was 35 pounds (15.9 Kg.). He continued the testosterone therapy, and by January 6 the testicles had descended into the scrotum. According to his mother he seemed brighter and talked more but was impish and mischievous. In the office he was constantly on the move, taking objects from the examining table and turning the door knob. On November 26 his height had reached 45 inches (114.3 cm.) and his weight 38 pounds (17.2 Kg.). This represents a gain of 17.8 cm. in height and 5 Kg. in weight within a period of eight months.

COMMENT

Progeria with nanism is a rare disease. It has been termed Hutchinson-Gilford disease. Recently Thannhauser[1] described Werner's syndrome (progeria of the adult) and Rothmund's syndrome. Thannhauser's review is an extensive and comprehensive one and covers all features of these syndromes. In the differential diagnosis between diseases related to Werner's syndrome (progeria of the adult) and Rothmund's syndrome he considers progeria of children with nanism.

He lists some of the characteristics of progeria of children with nanism as follows: "Progeria of children (Hutchinson-Gilford's syndrome), also called 'nanism senile' or 'progero nanie,' is a disorder which develops from a few months to three years after birth. In the cases reported the children were normal at birth. There was no history of familial occurrence of this disorder or of the interrelationship of the ancestors. The main clinical features observed almost uniformly in all cases were as follows: All the children with progeria looked alike. The published photographs look like the pictures of twins.

"All patients were dwarfed in stature. The skull was large in comparison with the face. The frontal and parietal bones were unduly prominent. The fontanels closed early. The scalp hairs were present at birth but became grayish and scarce, and completely disappeared in the course of the disease. There was either very little or no development of the eyebrows. The eyelashes were rare or absent. The faces of these children resemble those of newly hatched birds."

In his comment Thannhauser[1] said: "There is a certain similarity in the features of 'Werner's syndrome' and 'progeria with nanism' in children. The cases exhibiting Werner's syndrome are short, almost dwarfed in stature. In progeria of children the patients are definite dwarfs. In both syndromes the extremities are short and the abdomen disproportionately large. The fingers and toes are short, and the joints of the extremities are deformed in both instances. The skin is atrophic and taut on the extremities. The panniculus adiposus of the forearm and lower legs is poorly developed as are the muscles, in both disorders. The lack of hair is more pronounced in progeria of children than it is in Werner's syndrome. Sexual retardation is present in both syndromes. Diffuse arteriosclerosis, osteoporosis and the premature senile appearance are the most impressive features present in Werner's syndrome, as well as in progeria of children. The autopsy findings in both syndromes are diffuse arteriosclerosis and no definite changes in endocrine organs. Progeria of children, however, differs from Werner's syndrome as follows: (1) There is no familial occurrence. (2) There are no pressure ulcers of the skin. (3) There are no cataracts. (4) The abnormal features develop in early childhood in progeria of children, whereas in Werner's syndrome they become evident in the second decade of life.

It is suggested that progeria of children and Werner's syndrome result from multiple germ plasm defects manifesting themselves at different ages in abiotrophic features of the genotypic kind."

In a personal communication Thannhauser stated that he did not find a case of progeria in children with cataract, in contrast to such observations in progeria of the adult. He agreed that the case herein reported is one of progeria.

Talbot and his associates[2] gave a comprehensive report of a case with metabolic studies. This case came to autopsy. The summary and conclusion were as follows: "A 7½ year old boy with typical progeria was studied. The life history and the clinical and postmortem studies failed to explain the unique appearance, the dwarfing and the loss of subcutaneous tissue characteristic of this disease.

Metabolic studies revealed that the patient ingested and assimilated a quantity of food adequate for the maintenance and growth of normal children of similar body weight. It appeared, however, that all the calories in the diet were used to meet the basal and intermediary requirements of energy metabolism, thus leaving no residue for growth or for the accumulation of subcutaneous fat. Under the influence of testosterone therapy the patient gained a greater weight of musculature, according to the data on nitrogen and potassium balance, than he gained in total body weight. This was interpreted to mean that he had burned a significant amount of stored body fat to pay for the caloric deficit incurred by building muscle. The final studies showed that the patient could be made to gain by reducing the energy output with the aid of thiouracil.

It is concluded, therefore, that this patient with progeria was suffering from a metabolic disturbance which was characterized chiefly by an excessive utilization of calories for energy metabolism and which did not appear to be due to hyperthyroidism as it is ordinarily encountered in children. As a consequence of the hypermetabolism, even when the patient was assimilating a good diet, few if any calories were available for growth. It may be profitable to search for a similar disturbance in other types of patients who fail to gain or grow."

Thannhauser said that: "Werner, as well as Rothmund, suggested that we are dealing with a disorder of the ectodermal layer, since both skin and lens are derived from the ectoderm. Such a theory is not substantiated by the multiplicity of symptoms, involving blood vessels, subcutaneous fat tissue, muscles and endocrine glands; especially not since we know the symptom complex of a heredofamilial disorder involving only the ectodermal layer—'ectodermal dysplasia of the anhydrotic and hydrotic type' which is entirely different from the syndrome under discussion." Thannhauser is inclined to the view that the occurrence of defects of the entire germinal plasm, recessive in heredity, was the most plausible explanation of the pathogenesis of Werner's as well as Rothmund's syndrome.

It is of some interest that in mongolism, as well as in progeria of the adult, cataract is not uncommon. Likewise, mongols are fond of music, as was the child in the case of progeria here reported. This fondness for music in persons whose mental caliber is low to the point of idiocy is in contrast to the large number of intellectual musical geniuses. As is well known, there are many child prodigies in the musical field. Music has a soothing influence on the agitated mental states of psychotics. Such comparative studies must be of intense interest to psychiatrists. The appeal of music to the emotions is, of course, an almost universally shared reflex.

SUMMARY

A case of progeria with nanism and congenital cataracts was observed in a 5 year old boy. Progeria with nanism and cataracts is not unusual in Werner's syndrome of the adult, but the association of cataracts is a rare condition as a congenital defect. The child was born prematurely and at birth weighed 1,366 Gm. His growth was retarded. The cataract of the left eye disappeared spontaneously when he reached the age of 3 years. He was mentally retarded but even at the age of 3 had an unusual talent for music. Methyl testosterone 10 mg. was given in daily doses which resulted in an increase of 17.8 cm. in height and 5 Kg. in weight within a period of eight months.

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[1] Thannhauser, S. J.: Werner's Syndrome (Progeria of the Adult) and Rothmund's Syndrome: Two Types of Closely Related Heredofamilial Atrophic Dermatoses with Juvenile Cataracts and Endocrine Features; a Critical Study with Five New Cases, Ann. Int. Med. 23: 559-625 (Oct.) 1945.

[2] Talbot, N. B.; Butler, A. M.; Pratt, E. L.; MacLachlan, E. A., and Tannheimer, J.: Progeria: Clinical Metabolic and Pathologic Studies on Patients, Am. J. Dis. Child. 69: 267-279 (May) 1945.

Council on Foods and Nutrition

The Council on Foods and Nutrition has authorized publication of the following report.

James R. Wilson, M.D., *Secretary.*

STANDARDS ESTABLISHED FOR ENRICHED MACARONI

Nineteen states and two territories have enacted legislation requiring enrichment of white flour, bread and rolls. Enrichment of flour elsewhere in the country is by the voluntary action of the millers; enrichment of commercial white bread and rolls at present is required by War Food Order No. 1. That this standardized addition of thiamine, riboflavin, niacin and iron to these products has done much to improve the quality of the American diet is indicated by analyses of foods consumed in 1943 and 1944. Consumption studies show that without enrichment of its bread and flour the per caput diet in the United States would provide considerably less than the recommended allowances of the nutrients added to bread and flour in their enrichment.

The Council on Foods and Nutrition of the American Medical Association has consistently opposed indiscriminate addition of vitamins and minerals to foods. It has, however, encouraged such enrichment in certain instances, notably in the case of cereal grain products which contribute importantly to the diets of significant groups of the population.[1] Macaroni clearly falls within the category for which enrichment is endorsed. While the average per caput consumption of macaroni and related substances, spaghetti, vermicelli and noodles, is small, some parts of the population consume these foods in quantities much larger than the average. Also many of these people are in lower income brackets and therefore not infrequently obtain the cheaper brands of flour which are unenriched. Thus the case for enrichment of macaroni and noodle products is reasonably strong, and on the basis of such evidence presented at public hearings the administrator of the Federal Security Agency now has established standards of identity for enriched macaroni, enriched spaghetti, enriched vermicelli and enriched noodles.[2]

The "order" on enrichment of macaroni and related products became effective Oct. 7, 1946. The "order" does not require enrichment of these foods but gives the macaroni manufacturer permission to enrich his major products; following the example of the milling and baking industries, he is expected voluntarily to use the opportunity to improve the nutritional quality of his products. The approximate cost of the vitamins and minerals which must be added in the preparation of macaroni products is about 12 cents per hundred pounds based on wholesale prices existing at the time of the public hearings. The cost is higher than enrichment costs for bread and flour for the reason that somewhat stronger enrichment is required to compensate for cooking losses; even so, the cost is very small.

Recently reported is a study of the nutritive value of the per caput food supply for the United States.[3] It covers the years 1909 to 1945 and reveals a great improvement in the nutritional quality of the diet in the recent war years. Largely responsible was increased consumption of milk, leafy green and yellow vegetables and citrus fruits. However, milk, vegetables and fruits contribute rather unimportantly to supplies of iron, thiamine and niacin, and the increased supply of them was credited in large part to enrichment of white bread and flour. The supply of other sources of iron, thiamine and niacin, such as meats, nuts and legumes, did not increase to any great extent.

The contributions to the better average diet attributed to enrichment of flour and bread were calculated by the government statisticians on the assumption that enrichment in 1944-1945 affected only 65 per cent of the total supply of flour and commercial bread and rolls. Estimates made by others are higher than this, but in any case a gap persists between the total amount of wheat endosperm, namely white flour and granular equivalents, which at present is consumed as food and that part of the total which reaches the consumer in products enriched by the manufacturer. A sizable amount of all wheat endosperm prepared for human consumption, not less than 5 per cent, goes into macaroni and related products, and enrichment of these products will represent another step in the direction of securing nutritional improvement for all foods derived from wheat endosperm.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

BACTERIAL VACCINE MADE FROM H. PERTUSSIS COMBINED WITH BACTERIAL ANTIGEN MADE FROM H. PERTUSSIS.—Pertussis Endotoxoid-Vaccine.—A suspension of Hemophilus pertussis, phase I organisms, in a solution of H. pertussis endotoxoid. The bacterial suspension is prepared after the technic of Kendrick and Eldering, and the endotoxoid by the Strean method.

Actions and Uses.—Pertussis endotoxoid-vaccine is recommended for the active immunization of individuals who are susceptible to pertussis. It is not intended for treatment of the disease or for the production of immunity once exposure has taken place.

Dosage.—For children 4 years of age and older a total amount of 6 cc. should be administered subcutaneously in four doses twelve to fourteen days apart as follows: 1 cc., 1.5 cc., 1.5 cc., 2 cc. For children under 4 years of age the dose may be reduced for the initial injection; a satisfactory dosage schedule consists of five injections, also at twelve to fourteen day intervals, as follows: 0.5 cc., 1 cc., 1 cc., 1.5 cc., 1.5 cc. After completion of the preliminary course it is customary to give a fortifying dose of 2 cc. (one injection) each year up to 5 years of age. When it is inconvenient to have the patient return for injections more than three times, three injections can be given at twelve to fourteen day intervals, as follows: 1 cc., 2 cc., 2 cc. Dosage intervals of one month may be preferred in cases in which the additional length of time required for vaccination is not objectionable.

Ayerst, McKenna & Harrison, Ltd., New York

Pertussis Endotoxoid-Vaccine: 6 cc. vial (one immunization) and 24 cc. vial (four immunizations). Each cubic centimeter contains approximately 15,000 million killed H. pertussis (phase I) suspended in formalin-detoxified antigen (endotoxoid). Preserved with Merthiolate 1:20,000.

U. S. patent 2,371,002.

PENICILLIN OINTMENT (See The Journal, Nov. 2, 1946, p. 515).

The following dosage forms have been accepted:

E. R. Squibb & Sons, Inc., New York

Penicillin Calcium Ophthalmic Ointment: 3.6 Gm. tubes. Each gram contains 1,000 units of penicillin calcium in a base consisting of petrolatum 40 per cent, beeswax 4 per cent, anhydrous lanolin 10 per cent and peanut oil approximately 46 per cent.

Schenley Laboratories, Inc., New York

Penicillin Calcium Ointment: 28.35 Gm. tubes. Each gram contains 1,000 units of penicillin calcium in a base consisting of white petrolatum, U. S. P., 78 per cent, mineral oil 3.5 per cent, beeswax 3.5 per cent and anhydrous lanolin, U. S. P., 15 per cent.

THEOPHYLLINE ETHYLENEDIAMINE (See New and Nonofficial Remedies, 1946, p. 395).

The following additional dosage form has been accepted:

H. E. Dubin Laboratories, Inc., New York

Aminophyllin Rectal Suppositories: 0.5 Gm.

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[1] Policies of the Council with Respect to the Nutritive Quality of Foods, J. A. M. A. **129:** 348 (Sept. 29) 1945.

[2] Food and Drug Administration: Alimentary Postes, Definitions and Standards of Identity, Federal Register, July 9, 1946, p. 7520.

[3] U. S. Dept. of Agriculture, Bureau of Human Nutrition and Home Economics, in cooperation with Bureau of Agricultural Economics: Nutritive Value of the Per Capita Food Supply, 1909-1945, Washington, D. C., June 1946.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, NOVEMBER 16, 1946

THE CENTENNIAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION

The Centennial Session of the American Medical Association will convene in Atlantic City, June 9-13, 1947. By action of the House of Delegates the Board of Trustees established a special Committee on Centennial Celebration. That committee has cooperated fully with the Council on Scientific Assembly and with the Board of Trustees in arrangements for celebration of the centennial with a view to making it one of the greatest and most interesting medical assemblages ever convened.

Each of the scientific sections of the American Medical Association has been authorized to secure a distinguished speaker from abroad and to include also in its program a review of medical progress in the specialty concerned for the hundred year period. Dr. Edward L. Bortz, chairman of the Council on Scientific Assembly, has taken the responsibility with his Council for the development of a program of General Scientific Meetings, to be held on Monday afternoon and Tuesday morning and afternoon of the annual session. A distinguished guest from abroad has been secured for each of these. Each of the General Scientific Meetings will provide for the presentation of three papers constituting reviews of the advancement in the fields discussed, followed by panel discussions on such subjects as the modern management of heart disease, emergency surgery and antibiotics in therapy. The individual manuscripts for presentation will include such subjects as the use of radioactive products in medicine, advancement in the field of psychosomatic medicine, the use of antihistamine preparations, uterine bleeding, the modern management of cancer, nephrosis and nephritis, and the care of the skin of the elderly. The Journal will announce shortly the details of this program, with the names of the speakers and the subjects to be discussed.

The secretaries of the scientific sections have reported extraordinary interest in the program for the Atlantic City session, with more applications for places on the program than have been received since before the war. So great indeed has been the interest in some specialized topics that three special sessions will be held, devoted respectively to the history of medicine, to physical medicine and to allergy. These sessions are held as part of the temporary Section on Miscellaneous Topics.

Well under way as a significant feature of the celebration of the centennial is the utilization of Sunday, June 8, as a special public health day. A religious program is being arranged with representatives of the leading faiths of our country. This will be held in the great auditorium in Convention Hall and will no doubt be broadcast on one of the national chains. At the same time congregations assembled for religious services elsewhere throughout the nation will be given messages regarding the advancement of medical science and the improvement in the public health that have occurred during the hundred year period.

The division of motion pictures in the headquarters office of the American Medical Association is at present engaged in the development of two motion pictures dealing with the lives of the distinguished American physicians of the period concerned and with the evolution of motion pictures in medical teaching. The first public showings are contemplated for Monday evening, June 9, in the large auditorium.

So great is the demand for space in the Scientific Exhibit and in the Technical Exhibits that it has been necessary to devote all the available space in Convention Hall for this purpose. Most exhibits will have historical themes. The meetings of the scientific sections will be assigned to the assembly halls in the numerous excellent hotels of the convention city. These hotels are all within walking distance of the great convention hall.

The President's Reception, which is an important feature of each annual session, will be held on this occasion in the music hall of Convention Hall, which provides facilities for an attendance of many thousands. The distinguished foreign guests, as well as the officers of the American Medical Association, will on that occasion be honored at the reception, and music will be provided by one of the leading orchestras of the nation.

The plans here announced represent but a beginning on some of the many features that are contemplated as part of the celebration of one hundred years of progress in American medicine, associated with the foundation of the American Medical Association in May 1847. The first instalment of a history of the American Medical Association, to be published in 1947, appears in this issue of The Journal. From the small beginning there reflected has come the great organization which now includes almost 130,000 members with its own properties, its many periodicals, its innumerable services to the medical profession, its councils, bureaus and other agencies devoted to the advancement of medicine and the improvement of the public health.

GERSON'S CANCER TREATMENT

Some years ago a technic called the Gerson, Sauerbruch-Hermannsdorfer diet was claimed to be a notable advance in the treatment of tuberculosis. Gerson proposed, by the use of these diets, to change the nature of the soil in which the tubercle bacillus lives. According to the reports, Gerson had discovered accidentally some improvement in a patient with lupus who was on a salt free diet. The good results in many types of tuberculosis reported by Gerson were apparently not susceptible of duplication by most other observers.

Dr. Max Bernhard Gerson, according to our records, was born in Wongrowitz, Germany, Oct. 18, 1881 and was graduated by the Albert-Ludwigs-Universtät Medizinische Fakultät, Freiburg, Baden, Germany, in 1909. He was licensed in New York in 1938 and, according to the records of the American Medical Association, is today at 667 Madison Avenue, New York, credited with being a member of the Medical Society of the State of New York. For several years now THE JOURNAL has been receiving requests from people all over the United States for information about Dr. Max Gerson, who is said to be using a dietary and salt controlled method for treating cancer patients at the Gotham Hospital in New York. THE JOURNAL has on several occasions requested Dr. Gerson to supply information as to the details of his method of treatment but has thus far received no satisfactory reply. A preliminary report, "Dietary Considerations in Malignant Neoplastic Diseases," appeared in the *Review of Gastroenterology*, November-December 1945, page 419.

In the meantime occasional references have appeared in the press to the Robinson Foundation for cancer research, located at 14 Wall Street, New York, which is said to be supporting the Gerson method. In the last session of Congress hearings were held on a bill to appropriate $100,000,000 of federal money for research on cancer. Dr. Gerson is said to have presented 5 of his patients to these public hearings. Fortunately for the American people this presentation received little, if any, newspaper publicity. However, Raymond Swing, radio commentator, in a broadcast over A. B. C. July 3, 1946 told the world that the Gerson cancer treatment was producing remarkable results. People who sent for a copy of the broadcast were referred to Dr. George Wiley at the Gotham Hospital.

Now there has come to hand through a prospective patient of Dr. Max Gerson a schedule of diets alleged to be beneficial in such cases. The patient was a man aged 83, with cancer of the stomach and multiple metastases, whom Dr. Gerson had never seen. Nevertheless he provided a complete diet for a period of four weeks, given in minute detail. The diet, which resembles that given in the *Review of Gastroenterology* forbade tobacco, spices, coffee, tea, chocolate, alcohol, white sugar, white flour, pastries and sausages; in short, no canned, preserved, sulfured, frozen, smoked, salted, refined or bottled food. It specified that there must be no salt, soda, sodium bicarbonate, fats or oil. It forbade also for some time the use of meat, fish, eggs, milk, butter, cheese and bread. It permitted fruit but nothing from cans. It specified a mixed fresh apple and carrot juice and other fruit juices and vegetables all freshly prepared and saltless. It forbade the use of aluminum utensils and pots, and it forbade the use of pressure cookers. Basis of the diet was a special soup, of which the unfortunate victim is supposed to take 1 quart a day. The formula included a large parsley root, 3 or 4 leeks, 1 large celery knob, 4 or 5 tomatoes, 3 to 5 large potatoes, 2 or 3 large onions and 3 to 5 carrots. Also permitted was some oatmeal. The medication included Lugol's solution daily, niacin in large amounts daily, liver powder with iron daily, lubile—dried bile salts—one capsule four times a day, brewers' yeast three times daily, dicalcium phosphate with viosterol one tablet eight times a day, phosphorus compound 1 teaspoon dissolved in each glass of juice, 3 cc. of crude liver extract intramuscularly several times a week and also some injected vitamin K. The formula says that there should be no other medication because it can be harmful and dangerous, and it warns particularly against the use of anesthesia, because it says that the body becomes highly hypersensitive through this diet and that the usual anesthesia might become fatal. As a part of the routine Dr. Gerson insists that a patient have at least one copious bowel movement a day, preferably two, and he has provided a formula for an enema to secure this activity.

Early in October the Chicago *Tribune* called attention to the Robinson Foundation, which apparently finances itself by manufacturing electric wire and cable and building life boats and marine equipment. The foundation was established in 1941 but did not qualify for exemption under section 1016 of the revenue code until 1944. Incidentally, a considerable number of similar foundations associated with large industrial concerns have appeared on the medical horizon in recent years. According to Mr. George P. Robinson, president of the foundation, it first sought to finance its activities by contributions. Later the foundation acquired four small manufacturing plants owned by corporations. These were dissolved, and their facilities were operated as divisions of the foundation. Two of the corporations were sold. Those still owned are the Hatfield Wire and Cable Company of Hillside, N. J., and Wellin Davit and Boat Company of Amboy, N. J. Mr. Robinson said, according to the Chicago *Tribune*, that the manufacturing divisions are managed as if they were separate corporate entities and are operated as competitive business enterprises. They pay unemployment insurance, local and state taxes and provide for depreciation, but they qualify for federal tax exemption by conforming their operations to the provision of the revenue code as does a college. Among the members of the foundation's advisory committee are listed Charles Seymour, Harlow Shapley, Raymond Swing, Matthew Woll and W. Cameron Forbes. Irving Fisher, professor of economics at Yale University, is listed as the director in charge of the foundation's section on health education.

Without any further investigation it would appear that a technic has developed whereby industrial corporations may incorporate themselves as research foundations and thus be free from federal income tax, since their profits are given to research in various medical fields. The intimate details of the conduct of these foundations are not open for public inspection, and Mr. George P. Robinson, when questioned, declined to disclose the earnings of the foundation that he represents. Similar foundations have been established in New York and in Washington. One corporation formed by the alumni of New York University acquired ownership of a piston ring manufacturing company, the untaxed profits of which are turned over to the university.

In the present instance the Robinson Foundation seems to be devoted to the promotion of an unestablished, somewhat questionable method of treating cancer. The only statements as to the number of patients treated, the number benefited and the possible effects of the treatment is that in the *Review of Gastroenterology* already cited. It offers clinical impressions as to benefits secured but nothing resembling scientific evidence as to the actual merit of the method. Indeed, it admits lack of any actual cure, claiming only that patients seemed improved in health and that some tumors were delayed in growth or became smaller. The entire performance, including the financial backing, the promotion and the scientific reports, has a peculiar effluvium which, to say the least, is distasteful and, at its worst, creates doubt and suspicion.

TRANSMISSION OF PRIMARY ATYPICAL PNEUMONIA TO VOLUNTEERS

During 1943 and 1944 studies on the transmissibility of primary atypical pneumonia were conducted on a group of conscientious objectors. The purpose of the studies was to determine whether atypical pneumonia could be transmitted with secretions of the respiratory tract of patients, whether the disease so produced resembled the naturally acquired infection and, finally, whether the disease could be induced by bacteria-free filtrates. Three groups of experiments were conducted, the first in October 1943 and the second and third during the summer of 1944.

The results of the second two experiments have been recently summarized in a series of reports[1] emanating from the Commission on Acute Respiratory Diseases. In the first of these, 36 men between the ages of 19 and 45 were selected after clinical and roentgenographic examination had shown that they were free from organic or infectious disease. All the volunteers were isolated and observed for three weeks prior to inoculation. The material inoculated into the volunteers was obtained from the throat washings and sputum of 7 patients with atypical pneumonia who had been admitted to the wards of the Regional Hospital at Fort Bragg during the previous two months. Before inoculation each volunteer was assigned to one of three groups, each group containing 12 men. One group received pooled material which had been filtered through Corning sintered glass or Seitz filters. Another group received material which had been autoclaved at 15 pounds pressure for ten minutes, and the third group received inoculum which had been untreated.

The final experiment differed only in that the volunteer group had been enlarged to 42 men, a few changes were made in the method of segregation of volunteers within the hotel, and the inoculum was administered outdoors and on separate days. There was also a slight difference in the origin of passage material, that is, the material for inoculation had been obtained from 6 cases of atypical pneumonia which had been experimentally induced. In the experiment in which 36 volunteers were involved, 10 became ill with what was classified as atypical pneumonia; 4 had received the filtered inoculum, 3 the autoclaved inoculum and 3 untreated material. In the final experiment involving 42 volunteers, 6 developed characteristic signs of atypical pneumonia; none of 18 who received the autoclaved inoculum became ill, but 3 who received the filtered inoculum and 3 the untreated inoculum developed the disease. In addition to atypical pneumonia, 15 of the first group and 11 of the second group developed minor respiratory illness of an undifferentiated type, thus suggesting a relationship between this group of diseases and atypical pneumonia.

In those cases in which atypical pneumonia developed as a result of experimental inoculation the incubation period was approximately one week in those who received untreated inoculum. In the 16 volunteers who developed the clinical features of atypical pneumonia the symptomatology, physical findings, roentgenographic pattern and clinical course were similar to the naturally acquired infection. An insidious onset is characteristic. The physical signs included moderate inflammatory changes in the upper respiratory tract and varying degrees of infiltration of the lungs.

As in the naturally occurring infection, examples of mild, moderately severe and severe forms of atypical pneumonia were observed. Of the 16 who developed atypical pneumonia 2 had severe illnesses associated with extensive infiltration of the lungs, and an additional patient showed disorientation and emotional instability. Recovery, however, occurred in all patients, though it was more prolonged in those who were severely ill than in the others.

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[1] Commission on Acute Respiratory Diseases, Fort Bragg, North Carolina: The Transmission of Primary Atypical Pneumonia to Human Volunteers, Bull. Johns Hopkins Hosp. **79:** 97 (Aug.) 1946.

Laboratory studies were carried out on all the volunteers who developed primary atypical pneumonia and on the 26 inoculated persons who developed minor respiratory illnesses. Apparently the only significant change was a rise in titer of cold hemagglutinins, which occurred in 13 of the 16 cases of atypical pneumonia and in 11 of the 26 cases of minor respiratory illness.

These extensive and significant studies indicate that primary atypical pneumonia can be produced, though not invariably, by artificial transmission. The evidence indicates that the causative agent is filtrable, since nearly as high a proportion of cases developed following the use of a filtered inoculum as from the untreated material. On the basis of present knowledge there seems to be no difference between what is called primary atypical pneumonia and virus pneumonia. Furthermore, although evidence was not obtained indicating a relation between atypical pneumonia and influenza A or influenza B, it seems likely that many cases of minor respiratory illness occurring coincidentally with atypical pneumonia may be caused by the same etiologic agent.

Current Comment

NEW PLAN FOR REGISTERING FELLOWS IN ADVANCE OF THE ANNUAL A. M. A. SESSION.

At the suggestion and under the direction of the Board of Trustees, a plan is being developed for advance registration of Fellows who will attend the Ninety-Seventh Annual Session in Atlantic City, June 9-13, 1947. Arrangements have been made with the Housing Committee in Atlantic City to supply the headquarters office with duplicate slips of hotel room confirmations. These will be taken as evidence of proposed attendance at the session. The A. M. A. office in turn will send a letter and advance registration blank for immediate execution to Fellows who have made their hotel reservations. The registration form will be serially numbered, and this number will tally with that on an identification card that will be mailed to Fellows in return for the filled-in advance registration. The identification card is to be preserved and brought to the meeting. The identification card when presented at the proper window of the Registration Bureau in the Atlantic City convention hall will enable the clerk to supply, in a matter of seconds, the official Fellow's badge of admission to the scientific and social functions, program and lapel button for guest or guests. Any Fellow or Member planning to attend the meeting, but who will not have or need a hotel room in Atlantic City should write also to the American Medical Association, 535 North Dearborn Street, Chicago 10, for an advance registration blank. The 1947 session, which will commemorate the one hundredth anniversary of the American Medical Association, is attracting an exceedingly large attendance. Fellows will appreciate the convenience and saving of time to be experienced by this proposed advance registration.

SALMONELLA PULLORUM

In a period of three days in August 1945 at least 423 members of several squadrons at an army air base became ill[1] and 172 of them required hospitalization. The total number affected was larger, as some whose symptoms were mild did not appear at sick call. In the hospitalized patients the symptoms, in order of frequency, were fever (average 102, in some 105 F.), *diarrhea, headache, abdominal cramps, chills, nausea,* vomiting, myalgia, prostration and backache. All patients recovered and were discharged from the hospital by the end of the third day. However, the military importance of the outbreak is obvious. An investigation was made by the Central Diarrheal Disease Control Laboratory of the School of Aviation Medicine, Randolph Field, Texas, but the unit did not arrive at the base until the patients were recovering from the acute phase of the illness. Nevertheless the general mess where these squadrons ate their meals was promptly implicated and it was found that a rice pudding into which raw chicken eggs and canned milk had been mixed was the only food eaten by practically all of the patients. As it was, Salmonella pullorum was isolated from the stools of 11.7 per cent of the hospital patients; Salmonella derby was obtained from 1 patient (0.6 per cent). Other pathogens were not found, nor were salmonella cultures obtained from any of the healthy mess attendants. The anal swab technic was used, the swabs being plated directly and also after preliminary enrichment. Cultures were thus made from all but 1 of the hospital patients and from all of the healthy mess attendants. While the facts brought out were necessarily not complete, after careful consideration of various etiologic possibilities it was concluded that Salmonella pullorum was the active agent of the outbreak. Salmonella pullorum, a familiar cause of disease in chickens, is known to be present in the eggs of infected fowls. Usually described as not pathogenic for man, it has never before, as far as the authors know, been incriminated as the cause of a definite outbreak of food poisoning. The importance of determining its role as a human pathogen, however, had previously been emphasized.[2] The more recent evidence further serves to make necessary reconsideration of the role of this organism as a human pathogen and to warn against the use as food of raw eggs and egg products infected with Salmonella pullorum.

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[1] Mitchell, Roland B.; Garlock, Fred C., and Broh-Kahn, R. H.: An Outbreak of Gastroenteritis Presumably Caused by Salmonella Pullorum, J. Infect. Dis. 78: 57 (July-Aug.) 1946; abstr. Bull U. S. Army M. Dept 5: 248 (March) 1946.

[2] Edwards, P. R., and Bruner, D. W.: J. Infect Dis 72: 58 (Jan.-Feb.) 1943.

ORGANIZATION SECTION

Official Notes

RESOLUTIONS TO BE PRESENTED TO HOUSE OF DELEGATES

NOTE—These resolutions are published in accordance with a request of the House of Delegates to the effect that resolutions to be presented before the House of Delegates be published thirty days before the House of Delegates is to convene in session

These resolutions were adopted by the Michigan State Medical Society:

Resolutions on Establishment of General Practice Sections in Approved Hospitals

WHEREAS, The House of Delegates of the American Medical Association has established an individual section on the General Practice of Medicine, and

WHEREAS, The General Practitioner has been recognized as a separate branch in the medical profession, and

WHEREAS, This group has shown its interest in this section by registering 939 members in the section at the 1946 American Medical Association meeting in San Francisco, and

WHEREAS, Their scientific section meetings were well attended; and

WHEREAS, The House of Delegates has already voiced its approval of such sections in the separate state and county societies that are component parts of the American Medical Association, and

WHEREAS, Sections on General Practice have been started in some recognized hospitals that are approved by the American College of Surgeons and Council on Medical Education and Hospitals and have been accepted by those bodies, and

WHEREAS, Many hospitals have not established General Practice sections in their visiting active staffs, and their governing heads are doubtful whether such action has the approval of the bodies which set up the rules and regulations for the approval of their hospitals for interns and residents; therefore be it

Resolved, That the Delegates of the Michigan State Medical Society in convention assembled voice their approval of the establishment of Sections on General Practice in approved hospitals and that the Delegates from Michigan to the American Medical Association House of Delegates introduce a similar resolution at the next meeting, requesting approval of that body; and be it further

Resolved, That a copy of this resolution be sent to the Hospital Committee of the American College of Surgeons with a request that this body voice approval of such sections and include such in its Manual of Hospital Regulations

Resolution on American Medical Association Contribution to Health Education Projects

WHEREAS, The Michigan State Medical Society has supported a program of Health Education during the past five years; and

WHEREAS, Such Health Education is not purely of local but also of national interest and value, therefore be it

Resolved, That the delegates of the Michigan State Medical Society to the American Medical Association be instructed to initiate a study of a policy by which the American Medical Association can contribute a portion of the cost of such a program of Health Education carried on by any state medical society.

A. M. A.-N. B. C. CENTENNIAL BROADCASTS

In celebration of the centennial year of the American Medical Association, 1947, the twelfth annual series of the A. M. A - N. B. C. dramatized broadcasts will be devoted to features of medical progress in the United States during the hundred years of the existence of the American Medical Association

For purposes of the broadcast, the United States will be divided into twenty-five regions as shown in the accompanying map. These regions have been chosen with a view to grouping together states which have a similar history and similar general characteristics, such as, for example, the four states of the Rocky Mountain region, the two groups of New England states, and the Southeastern and the Central Southern groups.

One broadcast will be devoted to medical progress in each twenty-sixth and closing week will deal with the hundred years of the American Medical Association from a nationwide standpoint.

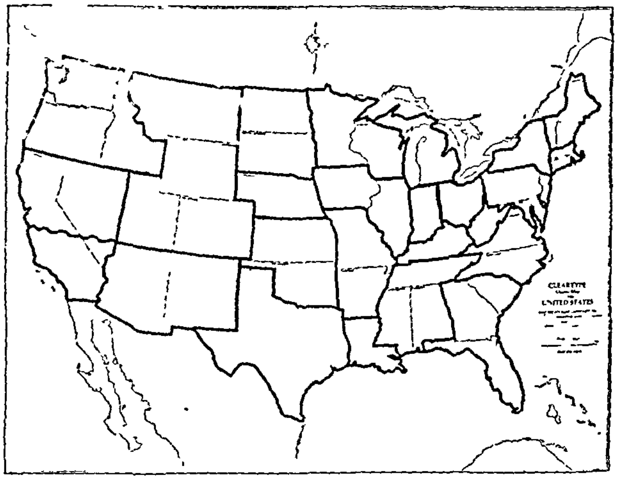
Each broadcast will be divided into two parts. The first part will consist of a dramatization dealing with historic physicians and medical events in the region. This will be broadcast from Chicago.. The first part of the program will take approximately twenty-three minutes.

For part two of the program we will switch from Chicago to a radio station to be designated in each of the twenty-five regional areas. From this station a three minute broadcast will be made by a speaker representing the medical societies in that area

State medical societies have been requested to furnish historical material and to nominate speakers. All have now responded and are in the process of making material available.

An effort will be made to announce in THE JOURNAL from week to week the date for each regional broadcast The sequence will be determined by the order in which materials are received from state medical societies.

It is hoped that each state medical society will give wide publicity to its regional broadcast within its own borders. Such publicity can be by local radio broadcasts, newspaper publicity, posters or newspaper advertising.



Published with permission of the American Map Company.

Twenty five regions into which states have been grouped.

The title for the series will be "Doctors—Then and Now," and the theme will be "A Century of Progress by American Medicine."

The dramatic scripts will be written by William J. Murphy, veteran medical script writer responsible for most of the previous A. M. A. - N. B. C. series; production will be directed by Norman Felton, director of the two preceding series; Joseph Gallicchio will again direct the N. B. C. orchestra. Arrangements with N. B C. have been made through the office of Miss Judith Waller, Public Service Director, Central Division, National Broadcasting Company.

The first four dates with topics are as follows: Dec. 7, 1946 Alabama, Mississippi and Tennessee; subject James Marion Sims; the speaker, to be announced, will broadcast from station WSM, Nashville. Dec. 14, 1946 Kansas and Oklahoma; subject Dr Samuel J. Crumbine; speaker Dr. L J. Moorman, who will speak from station WKY at Oklahoma City. Dec. 21, 1946 no broadcast Dec. 28, 1946 Minnesota and Wisconsin; subject William Beaumont; speaker Dr. William A O'Brien, who will speak from station KSTP at St. Paul.

The program will be broadcast from 3 to 3:30 p. m.. central standard time

Subsequent programs will be announced as soon as they are ready.

MEDICINE AND EDUCATION TEAM UP FOR HEALTH AND PHYSICAL FITNESS

The appointment of Dr. Dean F. Smiley and Mr. Fred V. Hein as consultants in health and physical fitness, on the staff of the Bureau of Health Education of the American Medical Association, is announced.

Dr. Smiley, recently a commander in the U. S. Navy, who will function as the medical adviser of the team, received both his A.B. and M.D. degrees at Cornell University. He has had a broad experience in preventive medicine and in all aspects of health education at Cornell University, in the New York State Education Department and as director of the medical aspects of audiovisual education in the U. S. Navy. Dr. Smiley has served as secretary and president of the American Student Health Association, is a member of the Committee on Motion Pictures of the American Medical Association and is a fellow of the American Public Health Association. He has written widely for professional magazines and is co-author of numerous books in the health field, among the most widely known of which are "A College Textbook of Hygiene," "Community Hygiene" and the "Health and Growth Series." Dr. Smiley also was a member of the investigating committee for the Carnegie Foundation for the Advancement of Teaching in its inquiry into school and college athletics.

Fred V. Hein, the educational consultant, comes directly from the public school field. He attended La Crosse State Teachers College, received his Ph.B. from Ripon College, the M.S. degree from the University of Wisconsin, and he expects to receive his Ph.D. from the same institution in the near future. Mr. Hein has taught all phases of health and physical education from the elementary through the college level and for the last eight years has been director of health and physical education in the public schools of Oshkosh, Wis. During the war he served as director of the Physical Training Program for the Army Air Corps unit at the Oshkosh State Teachers College and has lately been a visiting lecturer at the University of Wisconsin. Mr. Hein is a past president of the Wisconsin Health and Physical Education Association and has served as chairman of various sections of the Midwest Physical Education Society. He is a contributor to periodicals in the field and has recently completed his doctor's dissertation in the area of interpreting the program to the home and the community.

Coming Medical Meetings

American Medical Association House of Delegates Supplemental Session, Chicago, Dec. 9-11. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

Conference of State Secretaries and Editors, Chicago, Dec. 7-8. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Allergy, New York, Nov. 25-27. Dr. Karl D. Figley, 316 Michigan St., Toledo 2, Ohio, Secretary.

American Academy of Dermatology and Syphilology, Cleveland, Dec. 7-12. Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo, N. Y., Secretary.

American College of Surgeons, Cleveland, Dec. 16-20. Dr. Dallas B. Phemister, 40 E. Erie St., Chicago 11, Secretary.

American Society of Anesthesiologists, New York, Dec. 12. Dr. Curtiss B. Hickcox, 745 Fifth Ave., Room 1503, New York, Secretary.

National Society for the Prevention of Blindness, New York, Nov. 25-27. Mrs. Eleanor Brown Merrill, 1790 Broadway, New York 19, Executive Director.

Post Graduate Medical Assembly of South Texas, Houston, Dec. 3-5. Dr. M. B. Stokes, 229 Medical Arts Bldg., Houston, Secretary.

Puerto Rico, Medical Association of, Santurce, Dec. 13-15. Dr. Rafael A. Vilar, P. O. Box 3866, Santurce, Secretary.

Radiological Society of North America, Chicago, Dec. 1-6. Dr. Donald S. Childs, 607 Medical Arts Bldg., Syracuse 2, N. Y., Secretary.

Society of Surgeons of New Jersey, Newark, Nov. 20. Dr. Walter B. Mount, 21 Plymouth St., Montclair, Secretary.

Southern Surgical Association, Hot Springs, Va., Dec. 10-12. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Western Surgical Association, Memphis, Tenn., Dec. 5-7. Dr. Warren H. Cole, 1853 W. Polk St.; Chicago 12, Secretary.

Washington Letter

(From a Special Correspondent)

Nov. 11, 1946.

Republican Stand on Medical Legislation

Proponents of socialized medicine were expected to have less success in winning consideration of their legislation with the Republican party having won majorities both in the House and in the Senate. G. O. P. leaders have already expressed their opposition to enactment of bills advanced by advocates of socialized medicine. Not only will the eightieth Congress have many new faces in both houses but there will be extensive changes in committee lineups due to the reduction in the number of committees from forty-eight to nineteen in the House and from thirty-three to fifteen in the Senate. Republicans have indicated that they propose to accept the congressional streamlining passed at the last session. It will be adopted on a trial basis.

Public Health Officials Advised to get Support of Businessmen

Howard Strong of the Chamber of Commerce of the United States advised public health officials to get the aid of businessmen to secure enactment of health programs when he addressed a one day conference held by the Metropolitan Washington Tuberculosis Conference. Mr. Strong said "Citizens usually discount the need for a public health program when advanced by public health officials, but if businessmen get behind it the idea goes over much better." The use of streptomycin in the treatment of tuberculosis and the nursing problem were among other subjects discussed by the 250 delegates, which included public health officials, doctors, nurses and laymen interested in the treatment of tuberculosis.

Eight Thousand Amputees Apply for Specially Equipped Automobiles from Congress

The Veterans Administration has announced that 8,000 disabled veterans have applied for automobiles under the legislation signed by President Truman on August 8 whereby veterans who lost the use of one or both legs at or above the ankle are entitled to free cars. Only 75 cars have been delivered so far. The War Assets Administration has also made military typewriters available to disabled patients at Walter Reed General and Bethesda Naval hospitals for $20 and $25 each. Four categories of patients may apply for the typewriters: amputees, the paraplegic, the tuberculous and others facing extended hospitalization or future restrictions to sedentary work.

General Erskine Asks Jurisdiction Over Artificial Limb Industry

Major Gen. G. B. Erskine, director of veteran reemployment and retraining, has asked John Steelman, reconversion director, for jurisdiction over the manufacture and distribution of artificial limbs. Amputees, he says, complain that publicized "improvements" in artificial limbs have not reached the production stage. Mr. Steelman has not yet replied to General Erskine's request for authority to assist the Committee on Prosthetic Devices and independent manufacturers to translate research into production, for a training program for limb mechanics and fitters, and for establishing standards for the prosthetic appliance field.

Cancer Council Approves $225,000 in Research Grants

The National Advisory Cancer Council has announced that it has approved grants in aid totaling $225,000 to twenty universities, hospitals and research units. Twenty-four physicians, representing fourteen medical schools, met with the council to plan a medical education program against cancer, second disease in the cause of death in the United States. Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service, said that more comprehensive and better integrated courses in cancer at medical schools were considered.

Winner of Women's Medical Association Award Completes Study Here

Dr. Alicia Galaga Romero of Mexico City, first winner of the American Women's Medical Association fellowship award to foreign women physicians, has completed her year of study in this country, at Children's Hospital here. She has returned to her home city as a specialist in children's diseases.

GOVERNMENT SERVICES

ARMY

APPOINT MORE CIVILIAN CONSULTANTS

The War Department announced October 21 the appointment through the Surgeon General of 122 civilian medical consultants to the Secretary of War. This brings the total of civilian consultants available to the Army Medical Department to 327. Some 70,000 patients are in army hospitals throughout the world.

James H. Kidder, New York, dean of the College of Pharmacy, Fordham University, was named as consultant to the Surgeon General to advise on matters relating to pharmacy.

Those whose appointments were announced are:

Internal Medicine

Daniel H. Autry, Little Rock, Ark.
William W. Bondurant Jr., San *Antonio, Texas.*
Bruce P. Webster, New York.
Sam A. Overstreet, Louisville, Ky.
William H. Higgins, Richmond, Va.
John W. Brown, San Francisco.
Dwight L. Wilbur, San Francisco.
Edwin G. Bannick, Seattle.
Frank R. Maddison, Tacoma, Wash.
Treacy H. Duerfeldt, Tacoma, Wash.
James W. Haviland, Tacoma, Wash.
Verne R. Mason, Los Angeles.
Charles F. Wilkinson Jr., Ann Arbor, Mich.
Donald F. Marion, Coral Gables, Fla.
Jack O. W. Rash, Miami, Fla.
Franz H. Stewart, Miami, Fla.
Howard L. Alt, Evanston, Ill.
Marion H. Barker, Chicago.
Neil L. Crone, Belmont, Mass.
Perrin H. Long, Baltimore.
William D. Province, Franklin, Ind.
Robert C. Kimbrough Jr., Ann Arbor, Mich.
Henry M. Winans, Dallas, Texas.
Johnson McGuire, Cincinnati.
Arthur N. Ferguson, Fort Wayne, Ind.

Dermatology-Syphilology

George V. Kulchar, San Francisco.
Howard Hailey, Atlanta, Ga.
Clarence S. Livingood, Philadelphia.
Donald M. Pillsbury, Philadelphia.

Dermatology

Edward A. Levin, San Francisco.

Pediatrics

John A. Washington, Washington, D. C.
Harry H. Gordon, New York.

Physical Medicine

Frank H. Krusen, Rochester, Minn.
Kristian G. Hansson, New York.
Richard L. Kovacs, New York.

General Surgery

Robert T. Allison Jr., Akron, Ohio.
Thomas A. Botsford, Brookline, Mass.
Roscoe C. Giles, Chicago.
John A. Hardy, El Paso, Texas.
Siegfried F. Hermann, Tacoma, Wash.
George D. Lilly, Miami, Fla.
Thomas B. Quigley, Boston.
Fred W. Rankin, Lexington, Ky.

Otolaryngology

Hallowell Davis, St. Louis.
S. Richard Silverman, St. Louis.
Albert C. Furstenberg, Ann Arbor, Mich.
Mercer G. Lynch, New Orleans.
M. P. S. Spearman, El Paso, Texas.

Radiology

William E. Allen Jr., St. Louis.
Edgar M. McPeak, Washington, D. C.
Ernst A. Schmidt, Denver.

Orthopedics

Edward W. Cullipher, Miami, Fla.
Louis H. Edmunds, Seattle.
William H. Goering, Tacoma, Wash.
Robert P. Kelly, Atlanta, Ga.

Aural Rehabilitation

Grant Fairbanks, Los Angeles.

Neurosurgery

Frank W. Lusignan, San Francisco.

Obstetrics and Gynecology

Carlton N. Price, Washington, D. C.

Urology

Burton L. Stewart, North Hollywood, Calif.
William A. Sumner, San Francisco.

Plans and Operations

Eli Ginsberg, Ph.D., statistician, New York.
Mr. Jarrett White, real estate and hospital construction adviser, Washington, D. C.

Neuropsychiatry

Titus H. Harris, Galveston, Texas.
Martin L. Towler, Galveston, Texas.
Hamilton F. Ford, Galveston, Texas.
Melvin W. Thorner, San Antonio, Texas.
George S. Johnson, San Francisco.

Psychiatry

Seymour Rosenberg, Washington, D. C.
Jack R. Ewalt, Galveston, Texas.

Preventive Medicine

Nutrition
Otto A. Bessey, New York.
Charles S. Davidson, Boston.
Theodore E. Friedemann, Chicago.
Wendell H. Griffith, St. Louis.
Charles C. King, Scarsdale, N. Y.
Mr. Joseph L. Poulin, Melrose, Mass.
William D. Robinson, Ann Arbor, Mich.
Frederick J. Stare, Boston.
V. P. Sydenstricker, Augusta, Ga.
John B. Youmans, Nashville, Tenn.
Joseph T. Wearn, Cleveland.
Public Health
Franklin H. Top, Detroit.
Herman Kiefer, Detroit.
Thomas B. Turner, Baltimore.
Civil Public Health
Mr. Raymond F. Burghardt, Forest Hills, N. Y.
Martin Brobisher, Baltimore.
Alden B. Hatch, Jackson Heights, N. Y.
Bacteriology
George G. Callendar, Washington, D. C.
N. Paul Hudson, Columbus, Ohio.
Sanitary Engineering
Mr. William A. Hardenbergh, New York.
Health Education
Granville W. Larimore, New York.
Dermatology
William Leifer, New York.
Parasitology
Malcolm S. Ferguson, Princeton, N. J.
Laboratories
Gustave J. Dammin, St. Louis.
Medical Intelligence
Gaylord W. Anderson, Minneapolis.
Registered X-Ray Physicist
Carl B. Braestrup, Ph.D., New York.
Syphilology
J. Earle Moore, Baltimore.

Historical Consultants

History of Preventive Medicine, Southwest Pacific Area
James W. Bass, Dallas, Texas.
History of Preventive Medicine, European Theater
John E. Gordon, Waban, Mass.
History of Neurosurgery
Frederic H. Lewey, Philadelphia.
History of Surgery
David H. Poer, Atlanta, Ga.
History of the Army Medical Department
Morris Fishbein, Chicago.
Sanford V. Larkey, Baltimore.
Ben J. Robinson, Baltimore.
Richard H. Shryock, Ph.D., Merion Station, Pa.
Lewis H. Weed, Baltimore.

Consultants to Army Epidemiologic Board, Army Medical Research and Development Board

Sanitary Engineering
Gordon M. Fair, Cambridge, Mass.
Mr. Walter D. Tiedman, Albany, N. Y.
Professor Constantin Yaglou, Boston.
Preventive Medicine and Epidemic Diseases
Stanhope Bayne-Jones, New Haven, Conn.
Francis G. Blake, New Haven, Conn.
John H. Dingle, Cleveland.
Thomas Francis Jr., Ann Arbor, Mich.
William McD. Hammon, San Francisco.
George K. Hirst, New York.
Robert F. Loeb, New York.
Colin MacLeod, New York.
Kenneth F. Maxcy, Baltimore.
Karl F. Meyer, San Francisco.
John R. Paul, New Haven, Conn.
Albert B. Sabin, Cincinnati.
Jonas E. Salk, Ann Arbor, Mich.
Joseph Stokes Jr., Philadelphia.

FLIGHT NURSES

Twelve officers of the Army Nurses Corps graduated from the Army Air Forces School of Aviation Medicine at Randolph Field, Texas, on October 25 as flight nurses. These carefully selected volunteer nurses came to the school for an intensive nine weeks' training course, the first five of which were given over to basic military medical and surgical subjects and the final four weeks to actual air evacuation flights in the United States. On certification of the commanding general, Army Air Forces, the graduates are authorized to wear the distinctive wings of the Army Air Force Flight Nurses.

THE ARMY NEEDS PSYCHIATRIC SOCIAL WORKERS

In a War Department announcement, October 18, Major Gen. Norman T. Kirk, the Surgeon General, urged that officers and former officers qualified in psychiatric social work make application for integration into the Regular Army. Officers are eligible whether on active duty or not and regardless of their branch of service. Officers awarded commissions will receive them temporarily in the Pharmacy Corps.

Psychiatric social workers are needed to augment neuropsychiatrists. Former A. U. S. officers may apply for commission in the Pharmacy Corps as technical specialists in psychiatric social work. Appointments will be made in grades from 2d lieutenant through major in a grade not higher than that held during wartime. Applicants appointed who are now enlisted men or warrant officers will be discharged for the convenience of the government to accept commissions in the Regular Army. As this is an interim measure, special educational requirements for the Pharmacy Corps are waived. College graduates with a degree acceptable to the Surgeon General, which will basically qualify the officer for further training in psychiatric social work, will be acceptable for integration into the Pharmacy Corps. For initial classification as a psychiatric social worker the applicant must have completed at least one year of training in an accredited school of social work, including supervised field work and one year social case work experience in a health or welfare agency of acceptable standards.

Applications must be forwarded prior to Dec. 31, 1946. Formal applications, in triplicate, will be made on WD AGO Form 62 (Sept. 1, 1946) and forwarded to the Commanding General of the Army area in which the applicant resides.

OCHSNER MEDICAL FOUNDATION PURCHASES STATION HOSPITAL

The offer of the Alton Ochsner Medical Foundation to purchase the station hospital at Camp Plauche, Louisiana, for $150,000 has been approved by the War Assets Administration. The foundation proposes to establish a 625 bed hospital, of which it is planned that 300 beds will be for patients originating through the Ochsner Clinic, 25 beds for charity purposes supported by funds of the Ochsner Foundation, and 300 beds to establish an amputation center primarily for veterans of World War II. It is also anticipated that a school for teaching veteran amputees will be established in the hospital as well as facilities for servicing and testing of artificial limbs. The present staff of the foundation consists of 81 doctors, of whom 46 are veterans, 26 of the group being in training for special amputee work.

The installation at Camp Plauche consists of 111 temporary frame buildings on 86.56 acres of leased land. The transaction will include all the medical equipment and supplies now in the hospital which are essential to the proposed plan of operation, with the exception of certain items of dental equipment.

MEDICAL CARDS AVAILABLE TO LIBRARIES

Beginning October 1, entries prepared by the Army Medical Library will be printed and made available for distribution by the Library of Congress. These entries will vary from the present Library of Congress cards in some details. They will carry the subject heads and new classification numbers of the Army Medical Library. Subscriptions to the series should be placed with the Card Divisions of the Library of Congress, to which all inquiries regarding these cards should be addressed.

PERSONALS

Mr. Robert B. Austin has been appointed acting head of the Cleveland branch of the Army Medical Library to succeed Dr. Max H. Fisch, who has accepted a professorship at the University of Illinois. Mr. Austin has been with the Army Medical Library in various capacities since 1928.

AN INTENSIVE FOOD RESEARCH PROGRAM

Eighty colleges, universities and other agencies are collaborating with the Quartermaster Corps in a comprehensive research program designed to evaluate and improve the nutritional and physiologic adequacy and the acceptability of rations for use under operational conditions, to improve the functional characteristics of food and to investigate the chemical and microbiologic factors which affect the stability of foods and rations for the Army.

The program is sponsored by a Committee on Research which includes Emil Mrak, associate professor, division of food technology, University of California; Dr. W. F. Geddes, chief, division of agricultural biochemistry, University of Minnesota; Dr. H. E. Longnecker, dean, graduate school, University of Pittsburgh; Dr. George F. Steward, research professor, poultry husbandry, Iowa State College; Dr. George Gelman, technical director of the Quartermaster Food and Container Institute of the Armed Forces, and Dr. M. L. Anson, director of chemical research, Continental Foods, Inc. The center of this comprehensive program is the Quartermaster Food and Container Institute at Chicago. The program has been divided into more than a hundred research projects.

Col. Charles S. Lawrence, commanding officer of the Food and Container Institute, points out that acceptability of foods by soldiers is of utmost importance in military feeding. The problem of optimum acceptability, Colonel Lawrence says, is a complicated one for the civilian populations, but for the military these complications are increased many fold. Superimposed on these difficulties are environmental factors such as feeding under assault, combat, survival and support conditions; the effects of climate and of physiologic and psychologic factors; allergies; food habits, and numerous other factors.

A scientific advisory board serves to bring to the attention of the Committee on Food Research specific problems having military implications which require fundamental research, and the board assists in translating these problems into fundamental research. Members of the advisory board are Dr. George Berryman, director of research, Medical Nutrition Laboratory, U. S. Army; Dr. S. M. Cantor, Corn Industries Research Foundation; Dr. Ralph M. Conrad, director Bureau of Industrial Research, University of Denver; Dr. H. C. Diehl, director, the Refrigeration Research Foundation, Inc.; Dr. W. Franklin Dove, chief, food acceptance branch, Food and Container Institute; Dr. C. G. King, director, Nutrition Research Foundation, Inc.; Dr. H. H. Kraybill, director of research, American Meat Institute; Dr. Samuel Lopkovsky, associate professor, plant pathology, Cornell University; Dr. O. B. Williams, professor and chairman, department of botany and bacteriology, University of Texas; Dr. Louis Howard, chief, Bureau of Agricultural and Industrial Chemistry, U. S. Department of Agriculture, and Dr. S. T. Coulter, professor, dairy husbandry, University of Minnesota.

ENLIST CERTAIN DISABLED VETERANS

The War Department has announced that certain categories of disabled veterans will be accepted for enlistment in the Regular Army in order to use their skills and also to offer the Army as a career to many heretofore barred because of disability caused by honorable service. The War Department has directed that an initial 5,000 partially disabled veterans will be accepted for service in the Regular Army. Careful study of the accomplishments and the development of special skills by partially disabled men has proved that they have equal value in many occupations to many other men unhindered by any handicap. Some of the positions listed by the War Department as those that can be filled by these individuals include x-ray technician, medical technician, dental assistant, medical laboratory technician, dental laboratory technician, pharmacy technician, clerk and stenographer. This action permits the War Department to accomplish materially within the Army the rehabilitation placement of certain disabled veterans, a program it has long sponsored in civilian placement.

Use of the disabled enlistee to fill the need for skilled manpower will allow the Army to release more physically fit soldiers for more strenuous duties.

NAVY

FULL TIME ACTIVE DUTY FOR NAVAL RESERVE OFFICERS

The Naval Air Reserve Training Command, Glenview, Ill., invites the attention of reserve medical officers and pharmacists of the Hospital Corps to the opportunity to perform full time active duty at one of the following major naval air stations or at one of the Naval Air Reserve training units:

Stations of the Naval Air Reserve Training Command:

NAS, Atlanta, Ga
NAS, Columbus, Ohio.
NAS, Dallas, Texas.
NAS, Glenview, Ill.
NAS, Grosse Ile, Mich.
NAS, Los Alamitos, Calif.
NAS, Memphis, Tenn.
NAS, Minneapolis.
NAS, New Orleans.
NAS, New York.
NAS, Oakland, Calif.
NAS, Olathe, Kan.
NAS, Squantum, Mass.
NAS, St. Louis.
NAS, Willow Grove, Pa.

Naval Air Reserve Training Units

These are based at the following Naval Air Stations:

Anacostia, D. C.
Jacksonville, Fla.
Miami, Fla.
Norfolk, Va.
San Diego, Calif.
Seattle.

Officers in the aforementioned category interested in full time active duty as a member of the stationkeeper staff at one of the stations or units listed should initiate letters to the Bureau of Naval Personnel via the Chief of Naval Air Reserve Training, Naval Air Station, Glenview, Ill., and BuMed, listing three or four stations at which duty is desired in order of preference. Personnel are desired in the ranks of commander and lieutenant commander in the Medical Corps.

Officers qualifying for these billets can be assured of every consideration in obtaining and continuing duty at the station of their preference. It is the policy of the command to obtain "orders to duty involving flying" for designated naval flight surgeons. Government quarters are available at many of the major naval air stations.

Naval flight surgeons of the reserve desirous of affiliating with the organized or volunteer components of the inactive reserve naval or marine air groups training at one of the naval air stations or Naval Air Reserve training units listed should communicate with the commanding officer of the station or the Naval Air Reserve training unit at which the training unit is based.

NAVY AWARDS AND COMMENDATIONS

Lieutenant Francis H. McCullough

The Commendation Ribbon was recently awarded to Lieut. Francis H. McCullough (MC), U.S.N.R., Jackson Heights, N. Y., "for excellent service in the line of professional duties as medical officer aboard a United States destroyer when on April 6, 1945 he voluntarily boarded the U. S. S. *Morris*, which had been struck and left burning furiously by an enemy suicide plane during the amphibious assault and capture of Okinawa. In face of great danger from raging fires and imminent danger of explosion of the ship's magazines," continues the citation, "Dr. McCullough rendered invaluable professional assistance in the treatment of the numerous casualties. . . . As a result of his skill only 1 of the 43 seriously wounded men died." Dr. McCullough was graduated from Duke University School of Medicine, Durham, N. C., in 1943 and entered the service Oct. 1, 1944.

Commander Lawrence Stewart Bailey

The Commendation Ribbon was recently awarded to Comdr. Lawrence Stewart Bailey (MC), U.S.N.R., Zionsville, Ind., for distinguishing himself by excellent service as a senior medical officer of the Twenty-Second Special U. S. Naval Construction Battalion, in charge of malaria control for the battalion at U. S. Naval Base Manus from May 18, 1944 to July 31, 1945. "Through his professional skill, capable leadership and unremitting efforts," continued the commendations, "while located in an area in the southwest Pacific where malaria is prevalent, he successfully organized and maintained malaria control at such a high point of efficiency that no cases of malaria infection occurred within his battalion during a period of sixteen months. For his conduct throughout he is commended and authorized to wear the Commendation Ribbon." Dr. Bailey graduated from Indiana University School of Medicine, Bloomington-Indianapolis, and entered the service Sept. 3, 1942.

VETERANS ADMINISTRATION

STAFF APPOINTMENTS AT JEFFERSON BARRACKS HOSPITAL

The Dean's Committee has announced the appointment of 69 residents and attending and consultant physicians at the Veterans Hospital at Jefferson Barracks, Missouri. This committee, comprising four members from Washington University School of Medicine and four from the St. Louis University School of Medicine, is charged with administering the professional services at this hospital. The secretary of the Dean's Committee is Dr. Franklin E. Walton, associate professor of surgery at Washington University School of Medicine.

The attending and consultant physicians who receive appointments must be faculty members of one of the two medical schools, must have seen active war service and be members of their respective specialty boards. The residency appointments are for three years and will apply toward certification in the various specialties. This hospital has 727 beds and has been authorized by the Veterans Administration to establish an additional 500 beds.

PSYCHIATRIC CLINIC FOR VETERANS

The Mental Hygiene Society of Monroe County, Rochester, N. Y., and the Rochester chapter of the American Red Cross jointly sponsored a psychiatric clinic for veterans, which opened last June under the direction of Dr. George R. Lavine. The chief function is the diagnosis and treatment of veterans striving to adjust to civilian life and who present emotional problems for which psychiatric care is indicated. The president of the Mental Hygiene Society, Dr. William A. Sawyer, points out that the clinic is meeting a vital need and that 1947 promises to be an active year.

PERSONALS

Dr. Paul B. Magnuson, Chairman, Department of Bone and Joint Surgery, Northwestern University Medical School, Chicago, is acting assistant medical director for Research and Education, Veterans Administration, Washington, D. C. Dr. Magnuson is a founder-member of the American Board of Surgery, a member of numerous scientific organizations and a member of the Committee on Orthopedic Surgery of the National Research Council.

Dr. Maurice B. Strauss of Newtonville, Mass., formerly chief of medical service at Cushing (army) General Hospital, Framingham, will continue in the same capacity for the Veterans Administration, which took over that hospital October 1. Dr. Strauss served in the war in Hawaii, Saipan and Iwo Jima and was recently released from the army as a lieutenant colonel. He is an associate in medicine at Harvard Medical School and for many years was a member of the Thorndike Memorial Laboratory at the Boston City Hospital.

Dr. Montgomery A. Stuart of Annapolis, Md., a retired captain of the United States Navy Medical Corps, has been appointed to a position in the medical division of the Roanoke, Va., regional office of the Veterans Administration. He is a graduate of the Wayne University College of Medicine, Detroit, and during World War II served in San Juan, Puerto Rico, New York and Norfolk, Va.

PUBLIC HEALTH SERVICE

FELLOWSHIPS AVAILABLE IN MEDICAL RESEARCH

The United States Public Health Service, Washington, D. C., announces that about 120 one year fellowships in medical research are open to men and women who are graduate science students. These fellowships are part of the program of the National Institute of Health, a unit of the Public Health Service. Fellowships are open to graduates of accredited colleges who have majored in biology, chemistry, dentistry, entomology, physics and other scientific fields. Senior research fellowships awarded to those who hold Ph.D. degrees pay a yearly stipend of $3,000. Junior fellows who receive $2,400 a year must hold a master's degree in science or must have completed the equivalent of a master's degree in postgraduate study. The fellowship may be renewed for a second year. Applications should be sent to the Director, National Institute of Health, Bethesda, Md.

The National Cancer Institute, which operates as a division of the National Institute of Health, also has funds to train about thirty physicians in the diagnosis and treatment of cancer. Under a federally financed program, doctors who wish to specialize in this field may be appointed as trainees and be assigned to authorized nonfederal, nonprofit institutions in various parts of the country.

The Public Health Service also administers fellowships awarded by the state department to health personnel from other American republics and the Philippine Islands. One hundred fellowships will be available between now and the end of 1947 to qualified residents of the Philippines, and from fifteen to twenty fellowships, open through June 30, 1947, to professional persons from other American republics. Applications for these should be sent to the Surgeon General, United States Public Health Service, Washington 25, D. C.

DR. LEWIS R. THOMPSON RETIRES

After thirty-six years in the U. S. Public Health Service Dr. Lewis Thompson, Assistant Surgeon General in the Bureau of State Services, was retired for medical disability on November 1. Born in Indiana in 1883, Dr. Thompson received his M.D. degree from the Louisville Medical College and joined the Public Health Service as an assistant surgeon in 1910. He has been Assistant Surgeon General since 1930 and since 1943 has served as chief and associate chief of the Bureau of State Services. Dr. Thompson has served as scientific director of the International Health Division, Rockefeller Foundation, and as a member of the Division of Medical Sciences of the National Research Council. He was chief of the Medical Division of the U. S. Strategic Bombing Survey in Japan in 1945 and 1946. He organized the National Institute of Health and was its director for many years.

To fill the vacancy left by Dr. Thompson, Dr. Herman E. Hilleboe, who has been chief of the Tuberculosis Central Division since its inception in 1944, has been appointed associate chief of the Bureau of State Services with the rank of Assistant Surgeon General. Senior Surgeon Francis J. Weber, formerly assistant chief of the Tuberculosis Control Division, has been promoted to the rank of medical director and will serve as chief of the Tuberculosis Control Division.

MISCELLANEOUS

NATIONWIDE DRIVE FOR FUNDS FOR NURSES MEMORIAL

The chairman of the Nurses National Memorial, Arthur H. Johnson, announces an intensive nationwide drive, opening November 17 and continuing until shortly before Christmas, to raise $2,000,000 to build and endow a home and center in Washington, D. C., for nurses and medical women of the armed services. Contributions for the fund will be sought from American industry, business and finance and from citizens in all walks of life. Contributions will be gathered by local committees or sent to Nurses National Memorial Headquarters, Washington, D. C.

The Nurses National Memorial will benefit upward of 100,000 women who have served the armed forces. The home will have sleeping rooms for at least 300 women, an assembly room, library, complete kitchen and dining room facilities, class rooms and recreational rooms. Under a plan worked out, the nurses and medical women will enjoy the privileges of the home, paying only the actual cost of meals and room maintenance.

NEW BOARD TO CORRELATE GOVERNMENT SCIENTIFIC ACTIVITIES

President Truman set up on October 17 a new board to correlate the government activities in the field of science and named John R. Steelman to head the group, which will be known as the Presidential Research Board. This group is said to be an administrative substitute for the National Science Foundation, which, according to the Washington *Post*, was stymied in the closing days of the last Congress. The purpose of the new board is to insure that the scientific personnel, training and research facilities of the nation are used most effectively in the national interest.

Mr. Truman said, in part, in his executive order that the nation has a vast reservoir of war accelerated technologic development which must be applied speedily and effectively to the problems of peace, setting up productivity in both industry and agriculture, creation of new farm and factory products and advancement of medical science, and that in creating this board the groundwork is laid for a general plan designed to insure that federal scientific research will promote the most effective allocation of research resources between the universities, research foundations, industry and the federal government. Another objective of the board is to prevent expensive and inefficient overlapping of federal research work.

The twelve board members besides Mr. Steelman include cabinet officers and heads of various government agencies.

CHILDREN'S BUREAU PROJECTS

The Children's Bureau, Washington, D. C., announced on October 16, according to the New York *Times*, that in the near future several maternity care demonstration projects would be established, the first one at Tuskegee, Ala., made possible by appropriations voted by the last Congress under the Social Security Act. The purpose of these demonstrations, it was said, is "to show what might be done in getting comprehensive maternity care to a group of women who now often lack the most elementary care."

The committee of child specialists which recommended the establishment of the maternity care projects also recommended the establishment of blood banks in strategic centers for mothers needing emergency transfusions, providing chest x-ray examinations of all maternity patients to detect tuberculosis and other conditions early in pregnancy, providing funds to hospitals to care for prematurely born infants and setting up systems of care for crippled children who are victims of rheumatic fever, speech and hearing defects, epilepsy and chronic illnesses as well as the orthopedically handicapped.

The Children's Bureau is reported to have said that a team of five professional workers was appointed to travel round the country to visit cerebral palsy centers and that they will report to a national conference to be held at the Children's Bureau before the year ends. The committee recommended also the granting of training fellowships in mental health to teachers in order to offer more mental health services.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

California

Abramson, Mason H.	San Francisco
Alban, Harry	Los Angeles
Alberton, Edmund C.	Kentfield
Anderson, Forrest N.	Van Nuys
Baker, Francis J.	Los Angeles
Baker, Harvey W.	Santa Ana
Bower, Ewald A.	Los Angeles
Boyes, Frederick F. Jr.	St. Helena
Bruechert, Stanley S.	Pasadena
Clark, Joseph E.	San Francisco
Cleland, Robert S.	San Marino
Cobb, Byron O.	Oakland
Crowley, John T.	Oakland
Crumrine, Martin H.	Los Angeles
Cundift, Richard J.	Los Angeles
Dallke, Wendall E.	North Hollywood
Darby, John S.	Los Angeles
Davis, Walter D.	Santa Cruz
Dobson, Connelly M.	Alhambra
Doemeny, Emmerich P.	San Diego
Dreisbach, Robert H.	San Francisco
Factor, Morris	Los Angeles
Felton, Leland R.	San Francisco
Francis, Carl E.	Los Angeles
Fraser, Fred J.	Oakland
Gay, George C.	Arlington
Ghilotti, Attico E.	Modesto
Gotfredson, Herbert L.	Pasadena
Grimes, Orville F.	San Francisco
Haley, Edgar R.	Santa Monica
Hall, Joseph A. Jr.	Sierra Madre
Hills, Oscar W.	San Marino
Hogan, William J.	Los Angeles
Howard, Lot D. Jr.	San Francisco
Hultgren, Herbert N.	Santa Rosa
Jawetz, Ernest	San Francisco
John, Donald L.	Los Angeles
Kaplan, Maurice	San Francisco
Kolb, Felix O.	San Francisco
Lee, Lew H.	Oakland
Loeffler, Robert W.	Los Banos
Maron, Victor	Los Angeles
Marquess, Marcel J.	Santa Cruz
O'Brien, John T.	Palo Alto
Owen, Samuel B.	San Francisco
Palmer, Richard J.	San Francisco
Peterson, Kenneth E.	Montebello
Rosenberg, Harold	Beverly Hills
Ruminson, Simon E.	Orangecove
Schmidt, Karl W.	Burbank
Toreson, Wilfred E.	McCloud
Weber, Robert A.	Los Angeles
White, Hugh L.	San Francisco
Wilkinson, Allan Blodgett	Hollywood

Colorado

Marmor, Arthur A.	Denver
Stillwell, Tyler C. Jr.	Greeley

Connecticut

Baker, Philip G.	Winsted
Barile, Albert W.	New Haven
Battenfeld, John L.	Norwalk
Bayne-Jones, Stanhope	New Haven
Bradley, Edwin T.	New Canaan
Cavalieri, Rinaldo J.	New Britain
Criscuolo, Joseph A.	New Haven
Dakin, Theodore R.	Storrs
Davis, Roger W. Jr.	Windsor
Fien, Irving	Hartford
Fine, Joseph	Stamford
Golden, Abner	Bridgewater
Good, Robert C.	Waterbury
Heery, Francis W.	New Haven
Molnar, George Joseph	Bridgeport
Perkins, Joseph A.	Hartford
Smallen, Edward L.	New Haven

Delaware

Derickson, Philip G.	Wilmington
Di Cecco, Frank J.	Wilmington
Durham, Davis G.	Wilmington

Georgia

Fort, Chester A. Jr.	Atlanta
Hendry, Wayland M. Jr.	Washington

Illinois

Arden, Stanley J.	Chicago
Barron, Charles I.	Chicago
Beckette, Edmund S. Jr.	E. St. Louis
Biesinger, Wilford G.	Chicago
Bock, Harold L.	Elkhart
Boland, John E.	Chicago
Bounett, Dovell N.	Chicago
Booth, Boyington H.	Vandalia
Boswell, William W.	Rockford
Branch, Robert F.	Chicago
Brazelton, John R.	Chicago
Bromberg, Rudolph	Chicago
Brophy, Edward J.	Chicago
Brown, Carroll A.	Lincoln
Calosio, Richard T.	Joliet
Campagna, Ettor A.	Chicago
Canmann, Mark F.	Chicago
Carr, Bradley W.	Chicago
Casey, Byron L. Jr.	Park Ridge
Chereck, Edward J.	Chicago
Cody, George L.	Fort Sheridan
Distelheim, Irving H.	Chicago
Drennan, Clyde L.	Polo
Driscoll, Robert E.	Chicago
Eisele, Vincent G.	E. St. Louis
Fant, James R.	Chicago
Farley, Deane M.	Naperville
File, Richard C.	Decatur
Fisher, Seymour	Springfield
Fogle, Everett S.	Decatur
Foley, Daniel B.	E. St. Louis
Foulke, Robert W.	Spring Grove
Frame, John D. Jr.	Wheaton
Franck, Richard L.	Rock Island
Frantz, Kieffer E.	Chicago
Fricke, Albert F.	Chicago
Fricke, Raymond W.	Dixon
Gaberman, Peter	Chicago
Garrett, William A.	Grant Park
Gilbert, Harry B.	Chicago
Gill, Thomas A. J.	Chicago
Giovanelli, Ovidio J.	Chicago
Glenn, Robert W.	Chicago
Goldner, Martin G.	Chicago
Goldstene, James K.	Chicago
Grochowski, Ernest M.	Chicago
Handwerger, Irving	Chicago
Herdener, Russell L.	Moline
Hollowell, Mack W.	Chicago
Horwitz, Irwin D.	Chicago
Hurwich, Jerome J.	Chicago
Jacob, David	Chicago
Kaplan, Robert	Chicago
Kaplitz, Sherman E.	Chicago
Kappel, Louis C.	Belleville
Klow, Sidney Deutsch	Elgin
Krause, Irving S.	Chicago
Lewis, Leo L.	Chicago
Lippert, Robert	Chicago
Lorant, Eugene	Chicago
Luke, George R. Jr.	Morris
Mains, Marshall P.	Chicago
Maloney, Edward J.	Chicago
Motto, Salvatore A.	Chicago
Phillips, Melvin W.	Elgin
Rapp, Roy T.	Quincy
Reiner, Herbert M.	Chicago
Roach, William R.	Oak Park
Robin, Sidney W.	Chicago
Sellett, Thomas	Chicago
Sever, Buel L.	Chicago
Springer, Kurt	Chicago
Steinbach, Henry F.	Chicago
Strauss, Jerome F. Jr.	Chicago
Tuteur, Werner	Manteno
Wassermann, Franz W.	Chicago
Widder, Arpad	Chicago

Indiana

Beluk, Stephen R.	Gary
Bond, William H.	Indianapolis
Bowman, Charles M.	Albion
Boyd, Clarence E.	Indianapolis
Broshears, Kenneth P.	Chandler
Carmichael, Gordon G.	Terre Haute
Clunie, William A.	Corydon
Courtney, John W.	Indianapolis
Couter, William T.	South Bend
Craig, Alexander F.	Gary
Crawford, John A.	Indianapolis
Dagley, Hubert R.	Indianapolis
Davidson, Bernard	Elkhart
Deming, Jack E.	Indianapolis
Ferguson, Morris R.	Hobart
Fish, James C.	South Bend
Fisher, Gerald E.	Lebanon
Flick, John J.	Indianapolis
Glosson, Jack R.	Rockville
Gripe, Richard P.	Indianapolis
Hodgin, Philip T.	Rockville
Horst, William N.	Crown Point
Hull, Jack D.	Indianapolis
Hyman, Bernard	Indianapolis
Johnson, Jerome M.	Milltown
Johnston, William H.	Corydon
Viehe, Robert W. Jr.	Evansville
Zink, Robert O.	Indianapolis

Iowa

Berger, William J.	New London
Brush, Frederick C.	Shenandoah
Hoffman, Clifford W.	Des Moines
Maland, Donald O.	Davenport
Moershel, William J.	Homestead

Kentucky

Dean, Melvin L.	Nicholasville
Denham, Ralph M.	Williamsburg
Love, Selby V.	Louisville

Louisiana

McNamee, Harry G. Jr.	New Orleans
Mayes, James W.	Kinder

Maine

Cartland, John E. Jr.	Auburn
Munce, Richard T.	Bangor

Maryland

Andrews, Stephen R. Jr.	Elkton
Apter, Nathaniel S.	Baltimore
Beck, Harry M.	Baltimore
Berry, Herbert L.	Baltimore
Bird, Joseph G.	Baltimore
Bowen, Charles V. Jr.	Glen Burnie
Colfer, Richard J.	Baltimore
Cordi, Joseph M.	Baltimore
Cross, Ernest S. Jr.	Baltimore
Daugharthy, Aaron B.	Baltimore
Davis, George H.	Baltimore
Farr, Robert W.	Chestertown
Freeman, Norman R. Jr.	Baltimore
Galvin, Gerald A.	Baltimore
Gaskel, Jason H.	Baltimore
Goldberg, Sylvan D.	Baltimore
Goodman, William	Baltimore
Gubnitsky, Albert	Baltimore
Gundersheimer, H. N. Jr.	Baltimore
Hartmann, William L.	Baltimore
Hebb, Donald B.	Baltimore
Hoffman, Lloyd A.	Hagerstown
Johnson, Rolf E.	Hagerstown
Levi, Julian Elliott	Baltimore
McGough, Thomas F.	Cumberland
Milan, Edward F.	Baltimore
Powers, Hugh W. S. Jr.	Baltimore
Presti, Joseph C.	Baltimore
Tilt, LeRoy W. Jr.	Towson
Tompakov, Samuel V.	Baltimore
Young, John D. Jr.	Baltimore

PHYSICIANS SEPARATED FROM SERVICE

Massachusetts

Boone, Edward W	Newton
Boyer, Norman H	Lexington
Bozzo, Raymond J	Attleboro
Brown, Robert K	Boston
Burke, Edward N	Wakefield
Candis, Dean J	Chestnut Hill
Carroll, Robert E	Fall River
Cavalieri, Dominic	Somerville
Colozzi, Anthony E	Arlington
Copel, Joseph, W	Mattapan
Costrino, John J	Fall River
Dee, John E	Brockton
DeKruif, Hendrik	Wellesley
Diamond, Charles A	W. Springfield
Dick, Vernon S	Waban
Drinan, Francis W	Hyde Park
Duffy, John M. Jr	Wellesley
Emerson, George F	South Weymouth
Fanger, Herbert	Brookline
Golden, Isaac	Chelsea
Goldstein, Stanton L	Boston
Goldstein, William	Fall River
Hanley, Daniel F	Amesbury
Holihan, Joseph P	Andover
Horowitz, Sol Z	Boston
Huston, Lewis L	Longmeadow
Izenstein, Louis A	Springfield
Kelly, John L. Jr	Winthrop
Knight, John E	W. Roxbury
Kreplick, Sumner	Lynn
London, Irving Myer	Malden
McDaniel, Lewis T	Boston
McDonough, James F	Woburn
Michaels, Joseph J	Newton Center
Rogers, Horatio	Newton Centre
Slavin, Albert	Roxbury
Streeter, Charles C	W. Somerville
Thompson, Donald R	Boston
Willis, Albert W	Lowell
Zielinski, Joseph F	Holyoke

Michigan

Calkins, Horace N	Dearborn
Chapnick, Henry	Detroit
Crissey, Ronald E	Lansing
Diamante, Paul J	Nashville
Doty, James R	Detroit
Evseeff, George S	Grand Rapids
Haberlein, Charles R	Detroit
Killins, Charles G	Ann Arbor
Leach, David	Detroit
Marion, Donald F	Detroit
Murphy, George V	Iron River
Tann, Leo	Detroit

Minnesota

Davis, George R	Minneapolis
Dworak, Arthur F	St. Paul
Gaarde, Frederic W. Jr	Rochester
Greenspan, Benjamin	Rochester
Hagen, Wayne Sigvart	Minneapolis
Hammes, Ernest M	Rochester
Kaster, John D	St. Paul
Reid, James W	So. St. Paul

Missouri

Aufderheide, George S	St Louis
Berland, Harry I	St. Louis
Brown, George W	St. Louis
Carpenter, Emerson M	St. Joseph
Codnere, John T	St. Louis
Cornish, James A	St. Louis
Daly, John R	Richmond Heights
Davis, Frank L. Jr	St. Louis
Dougherty, John W	Kansas City
Elders, William F	St. Joseph
Enna, Melchior D	Kansas City
Goldring, David	St. Louis
Goodman, Nathaniel	Clayton
Grimm, Ross M	St. Louis
Grundmann, William H	St. Louis
Hamlin, Wyeth	Palmyra
Heimburger, Robert F	Springfield

Missouri—Continued

Hull, Orville B	Jefferson City
Mueller, Adolph Reginald	St. Louis
Murphy, Franklin D	Kansas City
Niebauer, Walter E	Kansas City
Nye, Robert S	St. Louis
Quinn, James H	Independence
Rindskopf, Wallace Jr	University City
Robinson, Robert R. Jr	St. Louis
Sachar, Leo A	St. Louis
Solomon, Lynn H	Lebanon

Nebraska

Crawford, William H	Omaha
Dickinson, Robert H	Omaha
Everitt, Neill Jay	Omaha
Hornberger, Evans Z. Jr	Omaha
McGee, Millard B	Omaha

Nevada

Baker, John M	Gardnerville
Jacobs, Herbert N	Reno

New Hampshire

Burbank, Bernerd H	Berlin
Bushold, Charles	W. Lebanon
Chagnon, Maurice E	Nashua
Mihachik, A. D	Northwood Narrows

New Jersey

Barker, Richard G	Montclair
Baum, Sina	Perth Amboy
Bieber, Gustave F	South River
Burroughs, Edmund W	Trenton
Cacchioli, Louis G	Newark
De Witt, Peter	S. Orange
Doyle, George F	Englewood
Finn, William F	Weehawken
Fisher, Robert G	Bound Brook
Gambacorta, Otto	Newark
Griesemer, Laurence C	Roselle
Griffin, William M	Hackensack
Grubin, Harold	Newark
Hopping, John S	Whippany
Krakauer, Joseph S	Paterson
Lake, George L	Newark
Levitov, Leo	Jersey City
McGeary, John A	Hillside
Manrodt, Kurt Jr	Newark
Mook, John Milton	Metuchen
Perlini, A. G. Richard	Palisades Park
Perrault, Richard P	Plainfield
Sauerbrunn, Bertram J. L	Elizabeth
Scales, Harold L	Jersey City
Spath, William H	Hoboken
Stemmerman, Grant N	Bogota
Szafir, Paul	Pleasantville
Waksman, Byron H	New Brunswick
Wisham, Lawrence H	Closter
Wolfe, Edward E	Teaneck

New York

Adler, John J	Theresa
Alpert, Seymour	Mt. Vernon
Anderson, Charles L	Jaskson Heights
Aquilina, Joseph T	Buffalo
Artz, Richard W	Flushing
Asch, Jerome K	Freeport
Audino, Herman D	Flushing
Barone, Carmelo V	Poughkeepsie
Baronowsky, Walter	New York
Bartlett, George T	Borodino
Beim, Norbert	New York
Bergen, Charles T	New York
Berk, Alexei N	New York
Besancon, Philip H	Syracuse
Bilecky, William B	New York
Bliss, Eugene L	New Rochelle
Bobb, Harry J	New York
Bove, Joseph M	Yonkers
Breedis, Charles	Mays Landing
Bullen, Stearns S. Jr	Rochester
Burdick, Daniel	New York
Carter, Clarence S	Freeport

New York—Continued

Carty, William W	Brooklyn
Casagrande, Peter A	Buffalo
Cataffo, Arthur A	New York
Chasnoff, Julius	New York
Chenowith, Maynard B	Jackson Hts.
Chesney, John G	New York
Christensen, John E	New York
Chu, Fey	New York
Clayman, Sigmund J	Forest Hills
Cohen, Henry S	Brooklyn
Coleman, Joseph A	New York
Collins, Vincent J	New York
Danos, Bela	Long Island City
Dantzig, Louis	New York
Darling, Arthur P	Geneva
Demy, Nicholas G	New York
De Simone, Nicholas	Bronx
Di Fiore, John A	New York
Donley, Robert S. Jr	Buffalo
Donovan, John T. Jr	Buffalo
Drexler, Herman	Brooklyn
Dunn, James M	Schenectady
Eckardt, Lisgar B	New York
Elis, Haskel O	New York
Ettinger, Arthur	New York
Eyre, John D Jr	New York
Fader, David E	New York
Failing, Willard N	Brooklyn
Fallon, John A	New York
Farr, Hollon W	New York
Faville, Rush B	Dolgeville
Fishman, Irving M	Queens Village
Fitzpatrick, John F	Flushing
Fitzpatrick, Raymond J	New York
Fletcher, Richard S	Buffalo
Friedlander, Ernest O	New York
Friedman, Arthur J	Arverne, L. I.
Garfield, Frederick M	New York
Garvin, William J	Yonkers
Gasper, Major W	Gorham
Generales, Constantine D	New York
Genvert, Harold	New York
Gold, George	Bronx
Goliger, Jack Jason	Brooklyn
Graffeo, Louis W	Brooklyn
Grauer, Franklin H	New York
Gravina, Gerard C	Brooklyn
Halperin, Louis	New York
Hamblin, William N	Syracuse
Hammel, Joseph V	Kenmore
Hammond, John D	Auburn
Handin, Irving L	Albany
Harer, Adolf E	Buffalo
Hayward, Vincent S	New York
Heinemann, Alfred D	Sinclairville
Hoffman, Paul F	Buffalo
Joshua, Manfred B	New York
Katz, Albert B	New York
Katz, Hyman M	Brooklyn
Kennedy, Sidney R. Jr	Buffalo
Kotkin, Leonid	Brooklyn
Kramer, Milton L	New York
Lanzone, Joseph A	Bronx
Lawton, James J. Jr	Brooklyn
Leis, Henry P	Saranac Lake
Levy, Benjamin F. Jr	Elmira
Lichtman, Harry S	Brooklyn
Lo Pinto, Francis J	Bronx
MacDueeie, William E	Buffalo
Mackles, Abraham	Brooklyn
Merenstein, Hyman	Brooklyn
Mertz, John Sherman	Albany
Moss, Armand H	New York
Most, Harry	New York
Murphy, James M	Syracuse
Nadel, Eliah M	Brooklyn
Oshlag, Abraham M	New Rochelle
Penhale, William D	New York
Podolnick, Aaron	New York
Raccuia, Vincent V	Brooklyn
Rapaport, Henry	Whitney Point
Rosenthal, Benjamin J	Brooklyn

PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

Sapio, Fred J.	Brooklyn
Scalise, Anthony J.	Brooklyn
Schilling, Fred J. Jr	Garden City
Shiff, Nathan A.	New York
Stiles, William W.	Rochester
Titus, Frederick P.	Glen Cover
Trattler, Arnold J.	Freeport
Vitale, Ronald F.	Brooklyn
Whittier, John R.	New York
Wickler, Gerhard S.	New York
Wildenberg, Jesse B.	Forest Hills
Winer, Marvin N.	Buffalo
Zenvener, William	Brooklyn
Zimmerman, Benjamin	Bronx

North Carolina

Andrews, Vernon L.	Mount Gilead
Berry, Francis X.	Greensboro
Bizzell, James W.	Goldsboro
Byrum, Clifford C.	Tyner
Cecil, Arthur B. Jr.	Durham
Conrad, Clyde D.	Winston-Salem
Craig, Louis A. Jr.	Raleigh
Crissman, Clinton S.	Pittsboro
Ferguson, Guerrant H. Jr.	Raleigh
Graham, John B.	Goldsboro
Jones, Donnie H. Jr	Selma
Kessler, Joseph	Leaksville

Ohio

Abbott, Henry L.	Tiffin
Beckerman, Samuel	Cleveland
Berke, Meyer	Cleveland
Boehmer, Henry E.	Parma
Bonser, William H.	Toledo
Brody, Daniel A.	Cleveland
Brown, Harold E.	Columbus
Cattell, James P.	Steubenville
Clark, Charles F.	Columbus
Cooper, Jack R.	Columbus
Correll, Paul H.	Relay
Craig, Benjamin R.	Cleveland
Crawford, Henry A.	Dayton
Dalton, William J.	Cincinnati
D'Amore, A. R. T.	Youngstown
Dewald, Donald W.	Cleveland
Dugan, David J.	Lakewood
Ebenstein, Benno	Columbus
Egeberg, Roger O.	South Euclid
Fintz, Ralph J.	Cleveland
Foley, James M.	Columbus
Froug, Charles	Dayton
Gambrel, Francis J.	Youngstown
Geiser, Frank M.	Cleveland
Gelbman, Frank	Youngstown
Geyer, Joseph H.	Columbus
Goldberg, Lawrence C.	Cincinnati
Grace, Ralph S.	Hamilton
Green, Robert S.	Wyoming
Greever, William N.	Woodville
Grill, Winfred, E.	Toronto
Hale, Frank A.	Cincinnati
Harris, Henry C.	Dayton
Harris, Jack L.	Middletown
Heller, Glenn H.	Akron
Hertzberg, Joseph M.	Toledo
Hill, Eugene S.	Canton
Hochwalt, Jerome P.	Lebanon
Jones, Mason S.	Columbus
Kohn, Paul M.	Cleveland
Laufer, Maurice W.	Yellow Springs
Linz, Vincent Harold	Cincinnati
Mamlok, Hans W.	Toledo
Murrey, Charles A.	Caldwell
Noble, Keith C.	Cleveland
Rack, Frank J.	Cleveland
Shapiro, Nathan	Cincinnati
Westbrook, Edwin R.	Warren
Wolf, Arthur F.	Valley City

Oklahoma

Charnas, Sidney	Oklahoma City
Kempker, Adele C.	Oklahoma City

Oregon

Aumann, Kurt W.	Portland
Beckwith, Harry G. Jr.	Portland
Bramwell, Donald M.	Corvallis
Davis, William J.	Portland
Hafner, Paul G.	Portland
Schneider, Leo	Portland
Thomas, Evan W.	Portland

Pennsylvania

Allsopp, Richard C.	Pittsburgh
Anderson, James T.	Beaver
Andolina, Stephen	Pittsburgh
Anstine, Dale T.	York
Bailey, John H. Jr.	Meadville
Baker, Daniel R.	Sayre
Bantly, Victor S.	Johnstown
Baum, Oscar E.	Philadelphia
Berger, Norman S.	Archbald
Bonucci, Bruno L.	Star Junction
Bowie, Morris A.	Bryn Mawr
Bowman, Thomas E. Jr.	Harrisburg
Bush, Louis G.	Reading
Carapella, John D.	Allentown
Cessna, Gerald H.	Cresson
Chagan, Franklin A.	West Manayunk
Christ, Nicholas J.	Philadelphia
Churchill, Robert W.	Ben Avon
Coane, Morton R.	Philadelphia
Coppolo, Bernard L.	Weedville
Curtis, Harrison E.	Corry
Davitch, Leonard S.	Philadelphia
DePiero, Nicholas	New Castle
Drogowski, Matthew J.	Freeland
Evans, Jon P.	Forty Fort
Fetcho, William V.	Jennertown
Finkbeiner, John A.	Harrisburg
Fisher, Harry L.	United
Fornwalt, George R.	Lansdowne
French, Arthur B.	Philadelphia
Fried, Paul H.	Philadelphia
Gartland, George D.	Johnstown
Gaydos, John D.	Berwick
Gerhart, Lewis Warren	Philadelphia
Gibbons, Robert J.	Pittston
Gibson, Edgar T.	Springfield
Gillis, John A.	Wayne
Godfrey, Lincoln Jr.	Merion
Goff, John P.	Coraopolis
Green, James L.	Tarentum
Gregory, Robert E.	Pittsburgh
Grove, Daniel D.	New Cumberland
Hamburg, Allen E.	Hatboro
Hamilton, James R.	New Bloomfield
Hauck, Francis A.	Philadelphia
Hess, Ivan W.	Royersford
Houston, Robert R.	Harrisville
Johnson, Carl G.	California
Kaye, Robert	Philadelphia
Linhart, Randolph W.	Jeanette
Manges, Willis E.	Philadelphia
Marino, Joseph N.	Scranton
Metzger, Charles W.	Bellevue
Moriarty, Charles A.	Philadelphia
O'Brien, William R.	Narberth
Sabol, John B.	Freeland
Saul, Robert J.	Reading
Scoglietti, Vincent C.	Pittsburgh
Semans, James H.	Uniontown
Semenza, Nicholas J.	Old Forge
Sharpless, Isaac	Bryn Mawr
Simons, William M.	Lane
Skversky, Norman J.	Philadelphia
Smith, Ralph W.	Willow Grove
Specter, Jacob	Philadelphia
Sutton, Edward L.	Bellevue
Tolochko, Myer H.	Johnstown
Van Meter, J. Ray	Elkins Park
Waldron, Jerome M.	Philadelphia
Weiss, Sidney	Philadelphia
White, James C.	West Newton
Zwerling, Herman	Philadelphia

Rhode Island

Kay, Maurice N.	Providence

South Dakota

Hohn, Theodore A.	Huron

Tennessee

DeSautelle, William A.	Knoxville
Duff, Price H.	Crossville
Haltom, Thomas B.	Nashville

Texas

Bornstein, David M.	Dallas
Celaya, Albert	Brownsville
Craddock, Wallis L.	Austin
Duplan, Don C. Jr.	Port Arthur
Eisen, Herman M.	Tyler
Eldridge, Irving C.	Ft. Worth
Fisher, Charles I.	Austin
Garren, John T. Jr.	Turnersville
Grafa, Barney G.	Midland
Holland, Joseph W.	Denton
Knight, William R. III	Houston
Lamberth, Ivey E.	Houston
McCormick, Thaddeus	Austin
Miller, Samuel I.	Houston
Moyar, John B.	Fort Worth
Mulloy, Mary E.	Stephenville
Pearce, John Y.	Ballinger
Wilkins, Afton N.	Conroe

Vermont

DesAutels, Eugene J.	Burlington

Virginia

Gililland, Norman A.	Alexandria
Mayo, Lemuel E. Jr.	Portsmouth

Washington

Bede, Brandt A.	Tacoma
Hurst, Cecil	Tacoma
Leavitt, Harry C.	Yakima
McNutt, Harlan P. Jr.	Port Angeles

West Virginia

Epperson, John W. W.	Winona
Fisher, Conrad M.	Newell

Wisconsin

Bunkfeldt, Frederick Jr.	Milwaukee
McNamee, James R.	Milwaukee

Wyoming

Beck, Frederick W.	Cheyenne
Crum, Kenneth O.	Rawlins

Bermuda

Ashdown, David S.	Warwick East

Hawaii

Ito, William S.	Honolulu
Okumoto, Pete T.	Honolulu

Mexico

Pulido, Venustiano	Mexico City

Puerto Rico

Carrasquillo, Modesto	Guayama
deHostos, Eugene M.	San Juan
Isales, Luis M.	San Juan
McConnie, Randolph J.	Fajardo
Miranda, Angel Naftali	Morovis
Morales, Juan E.	Mayaguez

Canal Zone

Ginsburg, Bearl L.	Gamboa

Canada

Hamren, Merle L.	Ohaton Alberta
Lax, Aaron	Toronto
Peikes, Irwin L.	Toronto
Wise, Solomon S.	Toronto

Cuba

Pelaez, Manuel J.	Havana

Scotland

Mahoney, Frank William	Edinburgh

MEDICAL OFFICERS RELEASED BY THE NAVY

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

Alabama

Baria, Wm. H.	Mobile
Dunning, Everette J.	Linden
Grasberger, Joseph C.	Birmingham
Harris, Leon E.	Banks
Harsh, John F.	Birmingham
Herrod, Henry G. Jr.	Plantersville
Keller, Frank G.	Birmingham
Nelson, Robert J.	Birmingham
Thomas, Walton D.	Montgomery

California

Abels, Daniel W.	Los Angeles
Allen, James R.	Oakland
Bacigalupi, Alfred A.	San Francisco
Baker, Charles R.	Los Angeles
Barron, Gilbert	San Diego
Beddoe, Paul	Alhambra
Bennett, Leslie R.	Alhambra
Berryman, John S.	So. Pasadena
Blood, Russell H.	Beverly Hills
Byrne, Harold J.	La Jolla
Caldwell, William G.	Los Angeles
Camp, Turner	Long Beach
Cannon, Frank M.	Bolinas
Clark, William H.	Palo Alto
Dasler, Adolph F.	Vallejo
Dennehy, Timothy J. Jr.	Los Angeles
Dennis, Robert	Berkeley
Diamond, Stanley	Hemet
Droz, Adolphus K.	San Fernando
Edwards, Wm. M. Jr.	San Rafael
Freeman, Richard V.	Los Angeles
Golton, Richard S.	Berkeley
Gore, Arthur L.	Riverside
Griggs, James Y.	San Diego
Hansen, Oluf S.	Los Angeles
Harrison, Harry L. Jr.	San Francisco
Hill, Harold M.	San Diego
Hinman, Frank Jr.	Redwood City
House, Leland R.	Los Angeles
Johnson, William M.	Pasadena
Jones, Peter H.	Fresno
Keating, Robert E.	Long Beach
Larocca, Robert A.	San Jose
Lewis, Alvin E.	Los Angeles
Lippman, Harvey N.	Los Angeles
Lipsett, Melvin M.	Piedmont
Liston, Eugene P.	Berkeley
McCorkle, James K.	Berkeley
Meiklejohn, Gordon	Berkeley
Miles, Hoyt B. Jr.	Hollywood
Mitchell, Allen C.	Long Beach
Mitchell, Thomas T.	Placerville
Mohr, Selby R. Jr.	San Francisco
Mullen, James K.	San Francisco
Nelson, Norman M.	N. Hollywood
Ortega, Leonard R.	Berkeley
Pahl, Blythe W.	Los Angeles
Parker, Donald DeW.	Pasadena
Ravenscroft, James W.	San Diego
Respini, Charles J.	Los Angeles
Roberts, James E.	Los Angeles
Ruddock, John C.	Los Angeles
Smith, William R.	Wilmington
Sooy, Francis A.	San Francisco
Thompson, Richard C.	Bakersfield
Thompson, Roderick A. I.	Pasadena
Tyrrell, Gordon C.	Inglewood
Warne, Ralph C.	Doheny Park
Wasemiller, Elmer R.	Los Angeles
Wilbur, William A.	Oakland
Williamson, Craig	Upland
Wilson, James N.	San Bernardino

Colorado

Biegel, Albert C.	Denver
Brown, Woodrow E.	Eagle
Demshki, Andrew E. Jr.	Denver
Hogsett, Glade C.	Longmont
Moore, John H.	Trinidad
Sisson, William R.	La Junta

Connecticut

Agrin, Alfred	New London
Berneike, Robert R.	New Haven
Dean, Peter M.	Greenwich
Epstein, Joseph I.	Meriden
Esposito, Joseph J.	Bridgeport
Fitzpatrick, Eugene J.	New Haven
Gelinas, Edmund J.	New London
Havill, Rupert A.	New Haven
Lannan, Jonathan T.	Stamford
Lear, Harold A.	New Haven
Lee, William	Madison
Lyddy, John R.	Bridgeport
Menousek, Joseph A.	Plainville
Phillips, Nicholas T.	Norwich
Scully, Michael R.	Bridgeport
Sheppard, Haynes W.	New Haven
Sims, Ethan A. H.	New Haven
Stewart, William W.	Stamford
Tulin, George A.	Hartford
Woodruff, Calvin W.	Hamden
Zdanis, Albert S.	Oakville
Zeluff, George W.	Bridgeport

District of Columbia

Brill, Warren D.	Washington
Donnally, Reamur S.	Washington
Ethridge, Clayton B.	Washington
Forester, Charles F.	Washington
Garby, Rodes C.	Washington
Gray, Paul H.	Washington
Kennedy, John A.	Washington
MacDonald, Gordon R.	Washington
Willson, Prentiss Jr.	Washington

Florida

Atkinson, Horace D.	Orlando
Blount, Frederick A.	Pensacola
Daniel, Roy D.	Fort Myers
Hinchey, John J.	Perry
Hutson, James M. J.	Miami
Mason, Donald G.	No. Miami
Mimms, John M.	Ocala
Wertheim, Arthur R.	Miami
Williams, Norman E.	Jacksonville
Wright, Jack L.	Miami
Zieve, Sanford L.	Orlando

Georgia

Anthony, Lynn E.	Macon
Benton, Charles C.	Atlanta
DuPree, John T.	Gordon
Freeman, Thomas R.	Albany
Harrin, Thomas S.	Rome
Holsenbeck, George H.	Winder
King, Coleman T.	Covington
Lester, William M.	College Park
Lever, Joseph E.	Sandersville
McFarlane, John W.	Atlanta
Murphy, Michael V. Jr.	Atlanta
Philpot, DeSaussure F. Jr.	Augusta
Powell, Fincher C.	Atlanta
Ricketson, George M.	Broxton
Sanders, Floyd R. Jr.	Decatur
Turner, John R.	Gay
Weinberg, Seymour P.	Atlanta
Williams, John W. Jr.	Augusta

Illinois

Afflhauser, Robert M.	Chicago
Boyd, Herbert L.	Lewiston
Carroll, James P.	Chicago
Davis, Colbert S.	Chicago
Davis, James W.	W. Frankfort
Desulis, Bruno A.	Chicago
Drucker, Edgar F.	Chicago
Eckhardt, Richard D.	DeKalb
Fitz, Casimir E.	Chicago
Fleischner, Charles A.	Chicago
Frazier, Shervert H. Jr.	Harrisburg
Glassman, Harold S.	Chicago
Goldsmith, David A.	Chicago

Illinois—Continued

Golseth, James G.	Chicago
Gray, Arthur M.	Chicago
Greening, Roy R.	Chicago
Greenwald, Bernard M.	Chicago
Griffin, Joe J.	Ramsey
Halperin, Bernard A.	Oak Park
Hartley, George T.	Bradford
Hendricks, Allen R.	Oak Park
Henry, Frank C.	Decatur
Huber, Paul R.	Chicago
Jacobson, Moses A.	Chicago
Jampolis, Robert W.	Chicago
Jones, Morris H.	Chicago
Joranson, Robert E.	Chicago
Joslyn, Arthur E. Jr.	Maywood
King, W. I.	Greenup
Krebs, Edwin G.	Greenville
Langstaff, John M.	Fairbury
Larson, William D.	Chicago
Levy, George	Chicago
Littman, Armand	Chicago
Lockhart, Charles E.	Witt
Mafit, Trowbridge R.	Chicago
Martin, Albert C.	Chicago Hts.
Mason, Alfred B.	Oak Park
Moore, Robert D.	Chicago
Nichols, Ira G. Jr.	Champaign
Nanzig, Reinard P.	Wilmette
Nardi, George L.	Chicago
Phillips, Donald C.	Oak Park
Rowlette, Raymond S.	Chicago
Rubinfine, David L.	Chicago
Schlageter, Charles W.	Chicago
Schmidt, Paul M.	Argo
Spurr, Charles L.	Chicago
Stenborg, Walter P.	Waukegan
Sullivan, Daniel F.	East St. Louis
Tanner, Lewis W.	Danville
Thomas, Gerald J.	Chicago
Thompson, Wilbur L.	Decatur
Todd, William H.	Laurenceville
Tourney, Robert L.	Quincy
Tuthill, John W. G.	Evanston
Ursin, John	Chicago
Von Leden, Hans V.	Chicago
Waidzunas, John F.	Chicago
Whitehead, William H.	Chicago
Wilson, Charles F.	Harrisburg

Indiana

Arata, Justin E.	Fort Wayne
Bajo, Michael D.	E. Chicago
Beck, Evard M.	Anderson
Brundza, Frank L.	Peru
Burman, Richard G	Jeffersonville
Bussard, Frank W.	South Bend
Duemling, Werner W.	Fort Wayne
Eastman, Joseph R. Jr.	Indianapolis
Elliott, J. C.	Middlebury
Ernst, Clifford E. Jr.	Indianapolis
Goodrich, Albert	Indianapolis
Jamison, Robert W.	Indianapolis
Jay, Robert P. Jr.	Kendallville
Kammen, Robert	Indianapolis
Lebamoff, Alexander T.	Ft. Wayne
Rothstein, Emil	Rockville

Iowa

Berg, John W.	Storm Lake
Bernatz, Philip E.	Decorah
Crew, Morton R.	Clearfield
Hasbrouck, Cecil F.	Waterloo
Hertzler, Jack H.	Burlington
Isham, Robert Benjamin	Waverly
Knouf, Clare E.	Des Moines
Magdsick, Carl C. Jr.	Charles City
Painter, Robert C.	Dubuque
Quarton, Gardner C.	Cedar Rapids
Ringrose, Edward J.	Iowa City
Smith, Alfred X.	Stacyville
Walker, John R.	Iowa City

MEDICAL OFFICERS RELEASED BY THE NAVY

Kentucky

Blair, Murvel C.	Louisville
Forbes, James S.	Hopkinsville
Perry, Joseph Q.	Louisville
Reynolds, Samuel E.	Morehead
Spencer, William L. Jr.	Maysville

Louisiana

Banks, Tyre E. Jr.	Colfax
Bridges, Ronzel H.	Shreveport
Byrne, George W.	New Orleans
Consigny, Paul M.	New Orleans
Crawford, Edward J. Jr.	Shreveport
DesBordes, Lee H.	New Orleans
Dupont, Hanson L.	Houma
Edwards, Edwin W.	New Orleans
Flores, Adolph A. Jr.	Pelican
Glasscock, Robert E.	Shreveport
Griffon, Joseph P.	Baton Rouge
Harris, Clifton E.	Pineville
Kass, Myron	New Orleans
Le Tard, Francis X.	Kentwood
McCirvey, Norborn R.	Ruston
Menendez, Charles V.	New Orleans
Mogabgab, William J.	New Orleans
Rankin, Samuel G.	Bogalusa
Roy, Elliott C.	Mansura
Ruys, Frank C.	New Orleans

Maryland

Chaput, Charles D	Baltimore
Classen, John N.	Baltimore
Crosby, Robert M. M	Baltimore
Elias, Thomas G.	Frostburg
France, Richard	Churchill
Greif, Roger L.	Baltimore
Kleiman, Allen	Baltimore
Krulevitz, Keaciel K.	Baltimore
Leighton, Alexander H.	Baltimore
Lewis, Richard Q.	Annapolis
Mace, Albert J.	Baltimore
Mountcastle, Vernon B. Jr.	Baltimore
Novak, Edmund R.	Baltimore
Padgett, Vernon M.	La Plata
Sadler, Henry H., Jr.	Annapolis
Sussman, Abram A.	Baltimore
Thompson, Raymond K.	Riverdale
Walsh, William B.	Takoma Park

Massachusetts

Argoff, Arthur	Worcester
Ayres, John C.	Brighton
Bloniare, Aloysius A.	Adams
Bottomley, George T.	Boston
Clauser, William J.	Boston
Doyle, John J.	W. Medford
Dretler, William M.	Marblehead
Ferrera, Charles J.	E. Boston
Fitzgerald, James A.	Brookline
Gilbert, Jerome L.	Worcester
Gordon, Bernard S.	Dorchester
Heffernan, Edward V.	Canton
Hopgood, Winthrop C.	Brockton
Howe, William W. Jr.	Dalton
Jewett, Everett P. Jr.	Worcester
Killam, Arthur R.	Winchester
Kuekan, James R.	Whitinsville
Lundberg, Robert N.	Gloucester
McCann, Donald S.	Attleboro
Machaj, Theodore S.	Ipswich
Mosig, William	Amherst
Murphy, Edward S. Jr.	Belmont
Parisi, Anthony J.	W. Springfield
Petti, Michael A.	Brockton
Quinn, Edward M.	Lowell
Reid, David H.	Melrose
Rogers, William P. Jr.	Fall River
Sabino, Anthony W.	Newtonville
Salhanick, Louis	Fall River
Schultz, Edwin D.	Wellesley
Thompson, C. A.	Newton Highlands
Verde, Aldo G.	Dorchester
Welcker, Merrill L.	Boston
Winchell, Gordon D.	So. Lincoln
Yeomans, Andrew	Brookline

Michigan

Albers, Millard J.	Detroit
Altshuler, Charles H.	Detroit
Amstutz, Kenneth N.	Ann Arbor
Andros, George J.	Ann Arbor
Bailey, William A.	Detroit
Bergen, Paul M.	Norway
Brewer, William A.	Detroit
Brundage, Robert D.	Ypsilanti
Burkhardt, Henry Jr.	Detroit
Callander, Chalmer G.	Ann Arbor
Dodds, Max E.	Flint
Duffie, David P.	Central Lake
Dupernell, Robert O.	Detroit
Eby, Edwin G.	So. Haven
Flucksa, George	Detroit
France, Charles J.	Detroit
Granger, George R.	Detroit
Gregory, Charles F.	Norwayne
Hayes, Laurence W. Jr.	Howard City
Hendricks, Frank R.	Detroit
Jacobs, John	Detroit
Johnson, James A.	Ann Arbor
Jones, William S. Jr.	Menominee
Judd, Alvin E.	Lansing
Kahn, Oscar B.	Detroit
Kee, Charles E.	Gladstone
LaRiviere, Joseph O.	Mt. Clemens
Latimer, Frederick R.	Highland Park
Lombardini, Victor B.	Detroit
Montgomery, J C. Jr.	Grosse Pte. Woods
Nedwicki, Edward G.	Detroit
Newman, John W.	Detroit
Parsons, Robert J.	Ann Arbor
Poppen, Donald V.	Lansing
Rasmussen, Richard A.	Grand Rapids
Rosen, Harold M.	Detroit
Seltzer, Sol N.	Marion
Simson, Clyde B.	Kalamazoo
Sparks, Harvey V.	Flint
Tansey, John J.	Ann Arbor

Minnesota

Ashe, William M.	Rochester
Cohen, Bernard A.	Minneapolis
Cooper, John P.	Minneapolis
Doherty, Elmer M.	Morgan
Drake, Ermerson H.	St. Paul
Gentling, Allen A.	Rochester
Hauser, Cyril H.	Luverne
Kloos, Edward C.	Rochester
La Fond, Edward M.	Little Falls
Lufkin, Charles D.	Northfield
Lytle, Francis T.	Minneapolis
McLaughlin, Blaine E.	Winona
Masson, James K.	Rochester
Olson, Carlton K.	Minneapolis
Regan, John J.	Minneapolis
Rowland, Willard D.	Rochester
Thompson, John J.	Winona
Thysell, Nels J.	Moorhead
Werner, George	Minneapolis

Mississippi

Ball, Robert C.	Richton
Colmer, William M. Jr.	Pascagoula
Dunavant, William D.	Pontotoc
Felknor, George E. Jr.	Meridian
Fuller, Josiah	Canton
Golden, Max L.	Laurel
Lane, Charles S., Jr.	Hattiesburg
McKinnon, Joseph G.	Hattiesburg
Messina, Aurelio P.	Vicksburg
Overstreet, John W. Jr.	Starkville
Roberts, Curtis M.	New Albany
Smith, Francis M. Jr.	Vicksburg
Staggers, Samuel R.	West Point
Wallace, Fred C.	Amory

Montana

Davis, Jasper W.	Cut Bank
Kuffel, Leonard E.	W. Missoula
Liest, Leonard J.	Fort Peck

Nebraska

Alevezos, George J.	Omaha
Burklund, Charles W.	Sutherland
Coppoc, Loran E.	Seward
Cowger, Robert C.	Hastings
Dahlstet, John P.	Bertrand
DeMay, George H.	Grand Island
Green, Norman E.	Lincoln
Griffith, Paul C.	Omaha
Hinrichs, William A.	Lincoln
Jackson, Ira J.	Omaha
Kobza, Valerian V.	Omaha
Ragan, Lloyd E.	David City
Rankin, Emmett C.	York
Scofield, John H. Jr.	Lincoln
Steffens, LaVerne C.	Lincoln
Turkel, Stanley	Omaha
Woodruff, Bradley B.	Grand Island

New Jersey

Allen, Frederick W. Jr.	Rutherford
Ballinger, Charles S.	Moorestown
Borino, John W.	Jersey City
Browne, Frank S.	N. Plainfield
Collier, James F.	Grenloch
Cook, Gordon C.	Denville
Crabb, Gordon	Upper Montclair
Deans, Robert D.	Ridgewood
De Persio, Robert E.	Milburn
De Vito, Alfred T.	Bradley Beach
Duey, John O.	Merchantville
Duffy, Robert W.	Hasbrouck Hts.
Elder, William W. Jr.	Montclair
Epstein, Martin	Trenton
Foley, James G.	Bernardsville
Frohbose, William J.	Plainfield
Gelbin, Ruehl M.	Butler
Gian-Grasso, Joseph A.	Camden
Greenspan, Francis S.	Perth Amboy
Gresser, Newton H.	W. Englewood
Haines, Henry L.	So. Orange
Hall, Ralph A.	Westfield
Hamill, John F.	Jersey City
Hofstra, Peter C.	Paterson
Hopper Guy R.	Plainfield
Hopper, John B.	Ridgewood
Johnson, Ernest E.	Garfield
Kershner, Maurice I.	Newark
Larsson, Evert A.	Trenton
Lawton, Richard W.	Ridgewood
Lerman, Frederick	Elizabeth
Levy, Norman J.	Highland Park
Looloian, Mehran W.	E. Orange
Martland, Harrison Jr.	Newark
Niemiera, Alexander K.	Middleton
Perkins, Rex B.	New Egypt
Post, Charles F.	Bloomingdale
Quittner, Howard	Budd Lake
Rosenthal, Alfred E.	Bayonne
Steller, Frederick C.	Butler
Strassburger, Paul J. Jr.	Caldwell
Tilney, Robert W. Jr.	Far Hill
Trosinski, Alfred J.	Jersey City
Urban, George J.	Woodbridge
Van Deusen, Hiram B.	Newark
Vargish, Jacob J.	Weehawken
Wagner, Richard F.	Englewood
Wannemacher, Paul H.	West Orange
Witman, H. J. Jr.	Freehold
Woodruff, John H.	Clifton

New Mexico

Evans, Kline W.	Carlsbad

New York

Agrin, Irving N,	Long Island City
Aune, Edwin F.	Brooklyn
Bedell, Wallace C.	Albany
Bergida, Jerome J.	Richmond Hill
Black, Samuel P. W.	Brooklyn
Blom, Gaston E.	New York
Bodkin, Richard L.	Brooklyn
Bradford, Joseph K.	Staten Island
Brookes, Robert D.	New York
Chaitin, Horace	New York

MEDICAL OFFICERS RELEASED BY THE NAVY

New York—Continued

Chibnick, Joseph	Jamaica
Child, Charles G. III	New York
Clayton, Samuel C. E. Jr.	Bayside, L. I.
Collins, Edmund M.	Buffalo
Cronk, Gary A.	Fayetteville
Culbert, Robert W.	Plandome, L. I.
Cummins, John P. J. Jr.	Ticonderoga
Curnen, Edward C. Jr.	Bronxville
Del Rey, Alfred J.	Brooklyn
Eckel, Robert E.	Buffalo
Eckelman, John H.	Carthage
Flood, Hugh E.	Bronx
Gabrielson, Robert M.	Brooklyn
Ginsberg, Irwin A.	New York
Goldman, Morris	Brooklyn
Goller, John J.	Staten Island
Grimshaw, John A.	Rockville Center
Hall, William W. Jr.	Cape Vincent
Hartwig, Arthur R.	Rochester
Hayes, James J.	Brooklyn
Healy, Robert E.	Brooklyn
Hoes, John S.	Kinderhook
Holzman, Ira J.	New Gardens
Homan, William E.	Brooklyn
Hubbard, Robert J.	Brooklyn
Jessup, Robert P.	Great Neck
Johnson, Ben B.	Long Island
Johnson, Spencer	Brooklyn
Jones, Cyril J.	New York
Kaufman, Jerome J.	Brooklyn
Kelly, Charles W.	Brooklyn
Kern, Arthur B.	Brooklyn
Knapp, Philip	Breesport
Larsen, Jene W.	Scarsdale
Laury, Roland B.	Elmira
Lautkin, Arthur	New York
Lawlor, Jeremiah F.	Binghamton
Lazar, Louis A.	Ellenville
Lehman, Howard C.	Snyder
Long, Clymer A.	Freeport, L. I.
Ludwig, Arthur W.	Brooklyn
McCarty, Maclyn	Flushing
McGinley, Joseph M.	Douglaston, L. I.
McGurty, John A.	New York
Mack, Arthur G.	Albany
McVeigh, Gorman J.	New York
Magenheimer, William P.	Springville
Marinucci, Edmond D.	New York
Melomo, Francis P.	Brooklyn
Miller, Edward W.	Gloversville
Miller, George J.	Hicksville, L. I.
Moon, Cary N. Jr.	Gilbertsville
Morgenstern, Leo L.	Bronx
Morrison, William W.	New York
Nicoll, Gordon A.	Bronxville
Pearson, Raymond	Ithaca
Philip, Arthur J.	Rockville Center
Phillips, Harry S.	Rochester
Phillips, Robert A.	New York
Pinchot, Gifford B.	New York
Pincus, Jerome	New York
Pinto, John D.	New York
Powers, Harry T.	New York
Root, Charles P. Jr.	Gilbertsville
Rosen, Harold L.	Brooklyn
Rosenbaum, Irving H.	Newburgh
Rossman, Israel M.	Wingdale
Schneider, Edward	New York
Schwab, William H.	Scotia
Segerson, James E.	Rochester
Semmens, James P.	Ithaca
Siegel, Sigmund A.	New York
Smiley, Dean F.	Ithaca
Stafford, Walter F.	Buffalo
Stowe, Lyman M.	Westbury
Vaughan, Roland G.	Brentwood, L. I.
Watson, Robert F.	New York
Weintraub, David H.	New York
Wendell, John M.	Hamburg
West, Robert	New Rochelle
Woodruff, James B. Jr.	Rochester
Ziegler, James E. Jr.	New York
Zito, Paul F.	Brooklyn

North Carolina

Bahnson, Edward R.	Winston-Salem
Bahnson, Henry T.	Winston-Salem
Beavers, William O.	Apex
Benbow, Edward P. Jr.	Greensboro
Bradsher, Jacob T.	Milton
Brandon, James R.	High Point
Dixon, Philip L. Jr.	Walstonburg
Forman, Richard C.	Winston-Salem
Fortune, Benjamin F.	Greensboro
Johnson, Gale D.	Roanoke Rapids
Jordan, William S.	Fayetteville
Laurens, John H.	Flat Rock
Liles, George W.	Charlotte
Peters, William A. Jr.	Elizabeth City
Rogers, Max P.	Burlington
Simpson, Paul E.	Durham
Stewart, Albert, Jr.	Fayetteville
Withers, William A.	Raleigh

North Dakota

Hill, Wallace C.	Erie
Kramer, John F.	Fargo
Lewis, Asle K.	Grand Forks
Ostergard, Kay N.	Kenmare

Ohio

Barreiro, Americo L.	Madison
Berry, Thomas P.	Rocky River
Bidder, Thomas G.	East Cleveland
Cleary, James F. Jr.	Cincinnati
Davis, Joseph J.	Middleport
Dwyer, William E. Jr.	Cleveland
Fralick, Charles E.	Springfield
Gerber, David M.	Middleton
Hackleman, Gene L.	Springfield
Hensel, Hubert A.	North Lawrence
Koehler, Henry P.	Findlay
Landy, Ernest	Cleveland Heights
Leary, William G. Jr.	Cincinnati
LeFever, Harry E.	Columbus
Lehman, Robert C.	Cincinnati
Lowrey, George H.	Cincinnati
McLemore, Robert A.	Alliance
Martin, Wayne B.	Bellefontaine
Mitchell, Dana C. Jr.	Cincinnati
Murphy, Frank V. Jr.	Marion
Nadler, Arthur W.	Cincinnati
Parks, James W.	Akron
Radzow, Karl H.	Cleveland
Reich, Stanley B.	Canton
Renner, Richard G.	Dayton
Sprague, Edward A.	Athens
Stack, Gerald A.	Lorain
Stauffer, Paul R.	Trotwood
Strauch, James H.	Cleveland Heights
Tornello, Robert L.	Youngstown

Pennsylvania

Aldisert, Caesar O.	Carnegie
Barkley, William W. Jr.	Waynesboro
Brisini, Patrick D.	Portage
Brooks, Robert	Philadelphia
Brown, Andrew J. Jr.	Duquesne
Brown, Walter H. Jr.	Carnegie
Brown, William E.	Philadelphia
Burkle, Joseph S.	Philadelphia
Carnahan, Donald S. Jr.	Pittsburgh
Casey, John D.	Archibald
Ellison, Ervin	Lancaster
Ermilio, Frank P.	Philadelphia
Fisher, Harry R.	Bala-Cynwyd
Herrold, Warren C.	Port Trevorton
Herron, Roland J.	Monessen
Hollstein, Frank E.	Pittsburgh
Hudson, John M.	Philadelphia
Kapp, Robert W.	Tidioute
Leedom, John F., Jr.	Philadelphia
Logue, James G., Jr.	Williamsport
Lorenz, Carl E.	Montgomery
Lowy, Alexander D. Jr.	Pittsburgh
Lyons, James C, Jr.	Linwood
McCloskey, George A.	Beaver
McKnae, Andrew III	Drexel Hill
Morgan, Russell E.	Bethelehem
Mulberger, Robert D.	Royersford

Pennsylvania—Continued

Nagle, Douglas B. Jr.	Erie
Pringle, Robert W.	Pittsburgh
Rambo, Oscar N. Jr.	Philadelphia
Ranieri, Tito A.	Ardmore
Roach, Robert J.	Erie
Schwartz, Harold	Philadelphia
Snyder, John F.	Millersville
Starcke, Sewell K.	Pottstown
Steigerwalt, John L.	Pittsburgh
Steimach, Witold P.	Philadelphia
Thompson, Harry G.	Philadelphia
White, Maxwell F.	Philadelphia
Woolhandler, George J.	Pittsburgh
Wozniak, John	McKeesport

South Carolina

Allison, Richard F.	Columbia
Bryan, Williams M. Jr.	Columbia
Cunningham, Ernest B.	Beaufort
Davis, Thomas M.	Columbia
Estridge, Montgomery N.	Rock Hill
Gazes, Pete C.	Charleston
Harper, Robert D.	Andrews
Pitts, James W.	Columbia
Snelling, John McL. Jr.	No. Augusta
Tiller, Wendell H. Jr.	Spartanburg
Wheeler, James E.	Columbia

South Dakota

Buchanan, Robert A.	Huron
Conley, Robert H.	Watertown
Holland, Lambert W.	Elkton
McGreevy, Edmund J.	Sioux Falls
Margulies, Harold	Rapid City
Roper, Charles E.	Edgemont
Steele, Granville H.	Aberdeen

Tennessee

Alsobrook, William L.	Nashville
Daugherty, Philip V.	Nashville
Dunn, Thomas M.	Memphis
Flaniken, John C. Jr.	Memphis
Green, Frank D.	Memphis
Hamilton, Harold C.	Rutherford
Hauser, Fred W.	Memphis
Havron, James B.	So. Pittsburgh
Hoppe, Rudolph A.	Chattanooga
Hyatt, Wayne P.	Tazewell
Lane, George F. II	Memphis
Mitchell, Billy G.	Millington
Shacklett, William W.	Murfreesboro
Speck, Carl T. Jr.	Cleveland
Thomas, Daniel M.	Harrogate

Utah

Callister, Cyril T.	Salt Lake City
Warburton, J. R.	Salt Lake City

Vermont

Kelleher, James H.	Montpelier

Virginia

Adams, Raymond A.	Redoak
Adamson, Nathaniel E.	Portsmouth
Bondurant, Robert F.	Roanoke
Budd, Samuel W. Jr.	Richmond
Farver, Harry E.	McLean
Gobbel, Walter G. Jr.	Suffolk
Jamison, William L.	Manassas
Lee, Parker H. Jr.	Lynchburg
McCausland, Alexander	Blacksburg
McKee, Kelly T.	Charlottesville
Matthews, Walter S. Jr.	Danville
Palmer, Harold V.	Charlottesville
Payne, Nelson S.	Norfolk
Wortham, Edwin	Richmond

Wisconsin

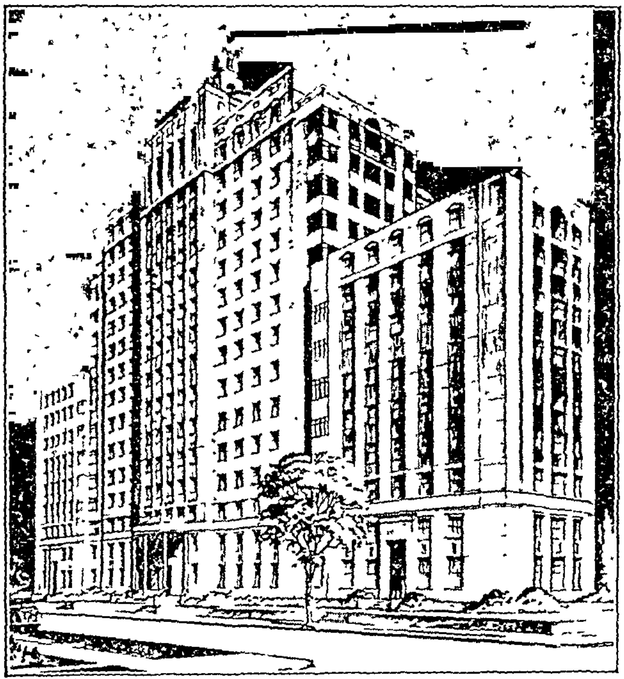
Berzito, Patrick M.	Milwaukee
Collentine, George E. Jr.	Milwaukee
Feider, Arnold P.	Belgium
Kent, Leslie T.	Kenosha
Lembert, Glenn E.	Milwaukee
Mortell, Edward J.	Oshkosh
Nelson, Henry E. Jr.	Madison

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education and public health.)

ALABAMA

Expansion at State Medical College.—Razing the George Eaves Surgical Tuberculosis Clinic the first week in September was the first step in the development of a medical center at the Medical College of Alabama since it became a four year school under the legislation appropriating $1,000,000 for building and $366,750 annually for maintenance and operation. With a view to creating a center of medical activities, the medical college acquired by purchase two blocks and by gift one block of downtown property adjacent to the block on which the Jefferson-Hillman Hospital is located. These three blocks have been allocated to certain other institutions that either are prepared to build as affiliated units or have prospects of doing so. These activities include a University of Alabama Center of Adult Education, Jefferson County public health building, a crippled children's clinic and a veterans' hospital. The Crippled Children's Clinic is a nonprofit organization of Alabama citizens who for many years have attempted to offer orthopedic services to the indigent crippled children of the state. They started out limiting their services to Jefferson County, in which Birmingham is located, but as funds were available they extended services to the crippled children of the state. This organization has raised $1,000,000 with which to build a crippled children's hospital in the University of Alabama Medical Center in Birmingham and has already purchased a block of property on which to build. The maintenance and operation of the hospital will remain in the hands of the board of directors of the organization, but the Medical College of Alabama, Birmingham, has been granted professional control and teaching privilege in the institution. The Jefferson County public health building is to be located in the medical center and is to be erected at a cost of a little more than one-half million dollars, which has been allocated by state, county and city governments. The university medical college will enjoy close affiliation with this organization in that the director of the public health program will be chief of the department of public health in the medical college. The University of Alabama Adult Education Center, which handles the university adult education program, will be built in the medical center and the first unit is expected to go into construction late in 1946. Facilities will be provided in the structure for the training of certain auxiliary medical personnel. The veteran's hospital which is to be built in the medical center will cost a little more than $7,000,000. This will be a 500 bed hospital with living quarters for approximately fifty staff members. The land for erection of the hospital has been purchased from the University of Alabama.



Medical College and University Hospital, Birmingham, Ala.

CALIFORNIA

Changes in Health Personnel.—Dr. Kenneth W. Haworth, formerly of Pratt, Kan., was appointed health officer for Humboldt County, effective October 1.——Dr. Evelyn F. Buchheim, for the past two years district medical officer for the Fresno area, California Department of Public Health, has resigned.——Dr. Harold T. Castberg has resigned as chief of the Bureau of Adult Health to become director of field investigations for the U. S. Public Health Service, Industrial Hygiene Division, Bethesda, Md. Dr. Lester Breslow is acting chief of the bureau of adult health.

Gimbel Lectures on Sex Psychology.—The Jacob Gimbel Lectures on Sex Psychology were delivered at Stanford University School of Medicine, San Francisco, by Margaret Mead, Ph.D., associate curator of ethnology, American Museum of Natural History, New York. The individual titles of the lectures were:

Biological Determinants, November 4.
Sex Patterns in Bali and New Guinea, November 5.
Cultural Determinants, November 6.
Patterns of Sex Difference in Contemporary United States, November 7.
Sex Differentiation and Creativeness, November 8.

The lectures were established by the late Jacob Gimbel under the joint administration of the University of California and Stanford University medical schools, San Francisco.

ILLINOIS

Positions Available.—Open competitive examinations for nurses with the Illinois Department of Public Welfare will be held December 7 by the Illinois State Civil Service Commission. Applications should be filed by November 16 with the commission, 501 Armory Building. About thirty-nine nurses will be appointed to positions at state hospitals, schools and other welfare institutions. The salary range for nurse I is $1,800 to $2,400. Other examinations on call for the Illinois Department of Public Welfare include physician I, hospital attendant, laboratory technician I, x-ray technician and psychiatric social worker I.

Chicago

Dr. Ivy Honored.—On October 23 Dr. Andrew C. Ivy, vice president in charge of the Chicago Professional Colleges of the University of Illinois, was guest of honor at a banquet given by former students and associates. A feature of the occasion was the proposal by Dr. Anton J. Carlson, a teacher of Dr. Ivy at the University of Chicago, to establish the Andrew C. Ivy Student Loan Fund at Northwestern University, where Dr. Ivy had been a member of the staff for twenty years until his recent appointment at the University of Illinois (The Journal, July 13, p. 928). Dr. Carlson contributed the first check for the creation of the fund.

Information Center on Alcoholism.—Plans are under way to open an information center on alcoholism in the loop by January 1 under the auspices of the newly organized Chicago Committee on Alcoholism (The Journal, October 19, p. 399). A survey will be made among hospitals to determine whether scientific treatment can be obtained and the center will serve as a referral agency, according to the Chicago *Daily News*, October 29. Later a broad research program will be undertaken, financed by contributions from private individuals and organizations. Temporary officers of the Chicago committee are Dr. Anton J. Carlson, University of Chicago, chairman; Walter O. Cromwell, Juvenile Protective Association, vice chairman, and Alexander Rotchan, Council of Social Agencies, secretary-treasurer.

LOUISIANA

New Division of Cancer Control.—Dr. James S. May, Oberlin, has been appointed acting head of the newly organized division of cancer control in the Louisiana State Department of Health. The project will be financed by an appropriation from the U. S. Public Health Service of about $50,000. This sum cannot be expended for treatment or establishment of cancer clinics but will be employed to make a survey of the state and to promote an educational campaign against cancer.

MAINE

Executive Secretary for State Medical Association.—Mr. W. Mayo Payson, house chairman, Legal Affairs Committee in the state legislature, Portland, has been appointed executive secretary of the Maine Medical Association, a new position created by the house of delegates at its annual meeting in Poland Spring in June. The appointment was effective November 1. Mr. Payson has held the position of corporation counsel of the city of Portland for the past ten years. He was Portland representative to the Maine legislature for five consecutive two year terms and is currently house chairman of its important legal affairs committee, a member of the committee on the reference of bills in the existing legislature and chairman of a recess committee studying state pensions. He has also served as house chairman of both the legislative research and the code committee and has been a member of the judiciary and federal relations committees. He had been a practicing attorney in Portland for sixteen years when appointed by the city council in July 1936 to the corporation counsel post.

MARYLAND

Personal.—Dr. Stanley H. Macht, formerly of Crewe, Va., has been appointed associate professor of radiology at the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore.

Association of Public Health Laboratories.—The Maryland Association of Medical and Public Health Laboratories met at Goucher College, Baltimore, October 30. Among the speakers were Mr. Paul A. Rohde, associate bacteriologist, state department of health, "Laboratory Diagnosis of Infections Caused by Pyocyaneus and Friedlander's Bacilli," and Dr. Harry Eagle, adjunct professor of bacteriology, Laboratory of Experimental Therapeutics of the U. S. Public Health Service and Johns Hopkins School of Hygiene and Public Health, Baltimore, "The Use of British Antilewisite in the Treatment of Arsenic Poisoning in Animals and in Man."

MASSACHUSETTS

Students to Report Effects of Deficient Oxygen Supply.—Boston University School of Medicine is now using a decompression chamber lent by the Army Air Force for research and experimentation in medical problems at high altitudes. The chamber, formerly used at Westover Field, Chicopee, for the training of flying personnel in the use of oxygen equipment, has been set up on the campus of the university school of medicine, 80 East Concord Street, and is now being used for experiments and demonstrations illustrating the relation of oxygen to the human system and results which occur when the oxygen supply is decreased. Students are able to sight their own reactions to the study by personally experiencing physiologic effects of the deficient oxygen supply. Under the arrangement the school of medicine is under contract to report results of the experiments to the Army Air Force and to aid in teaching a section of aviation medicine, now included in the physiology section course.

MICHIGAN

Dearholt Medal Awarded.—Theodore J. Werle, executive secretary of the Michigan Tuberculosis Association, was presented with the annual Dearholt Medal at the annual banquet of the Mississippi Valley Conference on Tuberculosis in Chicago September 26. The medal is given each year for exceptionally meritorious work in the field of tuberculosis control. Mr. Werle has been executive secretary of the Michigan Tuberculosis Association for twenty-five years.

Personal.—Dr. Christopher G. Parnall, Rochester, N. Y., director of the hospital of the University of Michigan, Ann Arbor, from 1918 to 1924, has opened a hospital consultant's office in Ann Arbor.——Dr. Abraham Leenhouts, Holland, who has completed fifty years in the practice of medicine, has been appointed campus physician of Hope College.——Maurice L. Moore, Ph.D., assistant director of research, Frederick Stearns and Company Division, Sterling Drug Company, Detroit, has been elected chairman of the division of medicinal chemistry of the American Chemical Society for 1947.——Dr. Pearl E. Hackman, formerly of Reading, Pa., has been appointed school physician for Lansing.

Fellowship in Anatomy.—Dr. John D. Green, a member of the faculty of the University of Cambridge, England, is in Detroit as a recipient of the Alexander Blain Hospital Fellowship in anatomy for 1946-1947. Research in fields of neurology and neural anatomy will be directed by Dr. Green at Wayne University College of Medicine, Detroit, for one year under the terms of the fellowship. Selection of the recipient was made by a faculty committee following acceptance of the $5,000 fellowship grant from the hospital by the Detroit Board of Education. Dr. Green, who has been on the Cambridge faculty since 1943, was trained at St. John's College and the Radcliffe Infirmary at Oxford, where he was awarded the hospital prize in obstetrics. He held various clinical appointments at the Royal Infirmary, Sheffield, and was a recipient of the Hallett Prize of the Royal College of Surgeons for research in anatomy.

MINNESOTA

Meeting of Radiologists.—The Minnesota Radiological Society held a meeting in Rochester, October 26. Among the speakers were:

Dr. Samuel F. Haines, Rochester, Radioactive Iodine in the Treatment of Exophthalmic Goiter.
Dr. John J. Wells, Rochester, Unusual Case of Giant Cell Tumor of Bone Treated with X-Rays.
Dr. Robert E. Fricke, Rochester, Role of Alpha and Beta Particles in Radium Therapy.
Dr. John D. Camp, Rochester, Amebiasis in Naval Personnel.
Dr. Harry M. Weber, Rochester, A Case of Diffuse Lymphomatous Involvement of the Colon.
Dr. Howard B. Burchell, Rochester, The Clinical Syndrome Associated with Pulmonary Arteriovenous Fistula: Report of a Case.
Drs. Burchell and Oscar T. Clagett, Rochester, A Case of Pulmonary Arteriovenous Fistula (motion picture).
Dr. Byrl R. Kirklin, Rochester, The Diagnosis of Carcinoma of the Stomach by Chest Radiography.
Dr. John R. Hodgson, Rochester, Lesions of the Small Bones of the Feet: Neurotropic or Infectious?

NEBRASKA

Licenses Revoked.—The state of Nebraska recently revoked the medical licenses of Drs. James C. Anderson and Philip T. Campbell, Omaha, charged with second degree murder in the death of Marian Blyth. Copies of the revocation orders issued by Dr. Wallace S. Petty, Lincoln, director of the Nebraska Department of Health, were received by Assistant County Attorney Philip Kneifl. The orders state that from April 23 to April 26 Drs. Anderson and Campbell "engaged in immoral, unprofessional and dishonest conduct, knowingly and wilfully failed to notify the proper authorities of the death of Marian Blyth; knowingly and wilfully failed to sign a death certificate; knowingly and wilfully unlawfully disposed of the body by depositing it in the Missouri River."

NEW JERSEY

Kenneth Thompson Joins Roche-Organon.—Dr. Kenneth W. Thompson, clinical professor of surgery, Tufts College Medical School, Boston, has been appointed medical director of Roche-Organon, Inc., Nutley. Dr. Thompson was formerly managing editor of the *Journal of Clinical Endocrinology.*

NEW YORK

New Director of Cancer Research.—Joseph G. Hoffman, Ph.D., physicist, has been named director of cancer research at the Rockwell Park Memorial Institute, Buffalo.

Study of Twins.—Newspapers reported that a statewide study of twins aged 60 years and older is being carried out under the direction of Dr. Frederick MacCurdy, New York City, state commissioner of mental hygiene. The study has been undertaken by the state department of mental hygiene in its research into physiologic and psychiatric processes of aging. Information given by voluntary participants will be kept confidential.

Edward Rogers Goes to California.—Dr. Edward S. Rogers, Albany, has resigned as assistant commissioner for medical administration to become professor of public health and medical administration and dean of the recently established school of public health at the University of California, Berkeley. According to the New York *Times*, Dr. Rogers will commence his resident duties as dean with the opening of the next semester in January. During the intervening weeks he will conclude his state duties, study public health and medical care programs in the United States and Canada, and visit a number of schools of public health.

Ralph Horton Named to New Position.—Dr. Ralph Horton, Oneonta, has been appointed general director of the tuberculosis hospitals in the New York State Department of Health, it was announced October 11. Dr. Horton, now director of the Homer Folks State Tuberculosis Hospital at Oneonta, will be responsible for inspection and supervision of all county and city hospitals which will take part in the statewide program to eliminate tuberculosis in the state within twenty years. Residents of the state suffering from the disease may now enter, free of charge, county and city hospitals authorized by the state health department to receive such patients. The new state program provides for state aid to local tuberculosis hospitals to the extent of about 50 per cent of the operating costs and will increase the state's annual health expenditures by $7,000,000.

New York City

Harvey Lecture.—Dr. Arnold R. Rich, professor of pathology, Johns Hopkins University School of Medicine, Baltimore, will deliver the second Harvey Society Lecture of the current series at the New York Academy of Medicine, November 21, on "Hypersensitivity in Disease."

New Professor of Radiology.—Dr. Harold L. Temple, assistant professor in charge of teaching radiology, Cornell University Medical College, has been appointed professor of radiology. Dr. Temple, who graduated at the University of Nebraska College of Medicine, Omaha, in 1935, has been a member of the staff of Cornell since 1941.

Tumor Clinic at Harlem Hospital.—The Tumor and Cancer Prevention Clinics at Harlem Hospital were formally opened with appropriate exercises October 24. Speakers included Dr. Louis T. Wright, director of surgery, Harlem Hospital, New York City, and Dr. Edward M. Bernecker, New York City commissioner of hospitals.

Grant for Research.—The department of pharmacology of Cornell University Medical College has accepted a research grant from the Cinchona Products Institute of New York for a study of the effects of cinchona alkaloids on heart arrhythmias. The work is to be carried on under the direction of Dr. Harry Gold, using various alkaloids of high purity, especially manufactured for this study by N. V. Nederlansche Kaninefabriek, Maarssen, the Netherlands.

First Fellowship Awarded by Eye Bank.—Dr. Walter Kornbleuth, ophthalmologist of the Hebrew University in Palestine, has been announced as the recipient of the first international fellowship to be granted by the Eye Bank for Sight Restoration, New York 21. The fellowship is for postgraduate training in ophthalmology and research problems relating to the cornea under the direction and supervision of a member of the staff of the Wilmer Institute at the Johns Hopkins University School of Medicine, Baltimore.

NORTH CAROLINA

Changes in Health Personnel.—Dr. Everett H. Ellinwood, Raleigh, has been named health officer for the Catawba-Lincoln District Health Department, effective July 1, succeeding Dr. Harold C. Whims, Newton, who holds a similar position in Buncombe County.

Medical Symposium.—The Duke University School of Medicine, Durham, and Duke Hospital combined in sponsoring their ninth annual medical symposium in Durham, October 4-5. Among the speakers were:

Dr. Eugene A. Stead Jr., Atlanta, Ga., Recent Advances in the Study of the Circulation and Their Application to Clinical Problems.
Dr. Alfred Blalock, Baltimore, Surgery of the Heart and Great Vessels.
Dr. Louis K. Diamond, Boston, The Clinical Importance of the Rh Factor, Especially in Obstetrics.
Dr. Francis J. Braceland, Rochester, Minn., Some Lessons Learned from World War II.
Dr. Ralph M. Tovell, Hartford, Conn., Lessons in Anesthesiology Learned in the European Theater of Operations.
Dr. Idys Mims Gage, New Orleans, Thrombophlebitis and Phlebothrombosis.
Dr. Sumner L. S. Koch, Chicago, The Modern Treatment of Burns.
Dr. Augustus Thorndike Jr., Boston, Problems of Convalescence and Rehabilitation in General Practice.
Dr. Francis R. Dieuaide, New York, The Application to Civilian Practice of New Knowledge of Tropical Diseases.
Dr. Chester S. Keefer, Boston, Streptomycin.
Dr. Theodore J. Abernethy, Washington, D. C., Differential Diagnosis of Primary Atypical Pneumonia.
Dr. John F. Mahoney, Staten Island, N. Y., The Modern Treatment of Syphilis and Gonorrhea.
Dr. Chester M. Jones, Boston, The Therapy of Acute and Chronic Hepatitis.

OHIO

University News.—Dr. Harold C. Haynie, recently released from military service, has been appointed assistant medical director of the Ohio State University Hospital and its outpatient department and as assistant professor of medicine and hospital administration in the medical school.

Study on Metabolism of Bacteria.—A grant of $17,200 from the U. S. Navy to the department of biochemistry of Western Reserve University School of Medicine, Cleveland, for the study of the metabolism of bacteria was announced October 24. The grant will support the first year's work in a three year program to be conducted by Harland G. Wood, Ph.D., head of the department, and Lester O. Krampitz, Ph.D., and Merton F. Utter, Ph.D., associate professors of biochemistry, using bacteria as experimental organisms to throw more light on living processes in human beings. The research also will be directed toward a clearer understanding of the action of antibiotics such as penicillin, antiseptics and other chemicals on bacteria, with a view toward increasing their effectiveness. The department of biochemistry recently received a grant of $13,800 from the American Cancer Society for a research project using "tracer elements" in the study of fundamental processes of life.

PENNSYLVANIA

Philadelphia

Lectures on Mental Hygiene.—The third series of lectures on mental hygiene, arranged by the committee on nervous diseases and mental hygiene of the Philadelphia County Medical Society, opened at the society's headquarters, November 4, to continue through December 16. Among the participants:

Dr. LeRoy M. A. Maeder, November 4, Adult Maladjustment Traceable to Childhood Experiences.
Dr. Paul Sloane, November 11, Mother and Baby.
Dr. Frederick H. Allen, November 18, The Baby Becomes a Person.
Dr. Robert S. Bookhammer, November 25, Family Relationships.
Dr. Gerald H. J. Pearson, December 2, The Child Meets Reality.
Mr. E. Gillet Ketchum, December 9, The Psychologic Aspect of School Disabilities.
Dr. Margaret DeRonde, December 9, The Psychiatric Aspect of School Disabilities.
Dr. Oliver S. English, December 16, Adolescence.

TENNESSEE

Physician Aids Library.—Dr. Phocian W. Malone, Big Springs, Texas, has set up a library trust for Watertown High School, Lebanon, of $500 annually for a period of ten years to supply current library needs. Dr. Malone graduated at the Watertown High School and is now senior surgeon at the Malone-Hogan Clinic and Hospital at Big Springs, Texas.

Pathologists Organize.—The Memphis Society of Pathologists was organized October 11 with Dr. Douglas H. Sprunt, professor of pathology at the University of Tennessee College of Medicine, Memphis, as temporary chairman. Charter members of the society include:

Dr. Thomas C. Moss, Memphis, director of laboratories, St. Joseph's Hospital.
Dr. Nolan E. Leake, Memphis, pathologist, Baptist Memorial Hospital.
Dr. Isadore N. Dubin, assistant professor of pathology, University of Tennessee College of Medicine, Memphis.
Dr. Alfred Golden, Memphis, director of laboratories, Baptist Memorial Hospital.
Dr. Israel D. Michelson, professor of bacteriology, University of Tennessee College of Medicine, Memphis.
Dr. Aubrey C. Gose, pathologist, Oakville Sanatorium, Oakville.
Dr. Edwin D. Murphy, instructor in pathology, University of Tennessee College of Medicine, Memphis.
Dr. Henry D. Chipps, pathologist, Methodist Hospital, Memphis.
Dr. Randolph T. Shields, assistant professor of pathology, University of Tennessee College of Medicine, Memphis.

WASHINGTON

State Organization for Spastic Children.—The Washington Spastic Children's Society, organized May 25 on a statewide basis, is active in presenting a bill to the legislature which meets next January to assist in effecting its objectives. The society plans to establish hospital or boarding schools, tentatively set at one in Seattle and one in Spokane and to have day schools in some twelve to fifteen cities throughout the state. What is described as a new feature is the establishment of an industrial school for the group by spastic children with somewhat lower mentality, the type which cannot get along well in any type of school and has sufficient mentality to carry out certain activities. Officers of the group include Merrill W. Boyack, Seattle, president; M. L. Graybill, Spokane, vice president; Phyllis M. Corrison, secretary; Helmer Kastner, treasurer, and Dr. Hulett J. Wyckoff, Seattle, medical adviser.

WEST VIRGINIA

Personal.—Dr. Olan T. Coffield, Morgantown, has joined the staff of the University Health Service at West Virginia University, of which Dr. John J. Lawless is director. Dr. Coffield received his A.B. degree in 1940 and his B.S. in 1942 at West Virginia University, graduating at the University of Louisville School of Medicine in 1943. After serving his internship at Wheeling General Hospital, he was commissioned in 1944 in the Army Medical Corps, serving until his release in 1946.

New Chief of Medical Services.—Dr. Harold H. Kuhn, Charleston, has been named chief of the division of medical services of the department of public assistance by Mr. Robert F. Roth, director. He will serve on a part time basis, effective November 1. There has been a vacancy in the position of chief of the division of medical services since Dr. Paul R. Gerhardt, Van, resigned in 1945 to accept appointment as director of the division of cancer control. Mrs. Mae W. Stratton, who has been acting chief of the division for several months, will serve as administrative assistant to the new director.

GENERAL

Cancer Service.—Dr. James R. Miller, Hartford, president-elect of the Connecticut State Medical Society, has accepted the chairmanship of the Service Committee of the American Cancer Committee. Other members are Dr. Robert R. Newell, Stanford, Calif.; Dr. Leonard W. Larson, Bismarck, N. D.; Dr. William W. Haggart, Denver; Dr. Alton Ochsner, New Orleans; Dr. Augusta Webster, Chicago; Dr. Bowman C. Crowell, Chicago; Dr. Alphonse R. Dochez, New York; Dr. Edward W. Chamberlain, Philadelphia; Dr. Thomas A. McGoldrick, Brooklyn; Dr. Louis H. Bauer, New York, and Dr. Edward J. McCormick, Toledo, Ohio.

Harry M. Weaver Named Director of Research.—Harry M. Weaver, Ph.D., acting director of research for the National Foundation for Infantile Paralysis, New York, has been named director of research. Previously on the faculty of Wayne University College of Medicine, Detroit, Dr. Weaver joined the National Foundation staff last February as assistant to the medical director. Dr. Weaver will be responsible for the research program of the national foundation, through which grants are made to established research organizations such as universities, public health laboratories and hospitals to enable scientific investigators throughout the country to carry on programs of research designed to find ways to prevent or cure poliomyelitis. Until the end of May this year the national foundation had authorized March of Dimes funds expenditures of $17,329,189.01 for research, education and epidemic aid in poliomyelitis. Of this amount $5,745,977.88 was authorized for support of research.

Cancer Conference.—The National Advisory Cancer Council will sponsor a conference on gastric cancer at Billings Memorial Hospital, University of Chicago, December 5-6. The conference was arranged by the Gastric Cancer Committee of the council and is the third of its kind. The first was held in 1940 in the National Cancer Institute of the National Institute of Health. The council is placing particular stress on cancer of the gastrointestinal tract, which accounts for 45 per cent of the total cancer deaths in this country. Included among the speakers will be:

Leonell C. Strong, Ph.D., New Haven, Further Observations on the Genetic Nature of Gastric Cancer in Mice.
Dr. Shields Warren and Dr. Elsie M. McPeak, Boston, Studies on the Pathology of Gastric Carcinoma in Mice.
Clarence C. Lushbaugh, Ph.D., Chicago, Experimental Hypertrophic Gastritis and Gastric Polyposis in Monkeys.
Dr. Edward B. Benedict, Boston, Observations on the Gastric Mucosa in Pernicious Anemia After Liver Therapy.
Drs. Leo G. Rigler, Minneapolis, and Henry S. Kaplan, New Haven, Pernicious Anemia and Carcinoma of the Stomach.
Dr. Cornelius P. Rhoads, New York, Highlights of Metabolism Studies in Gastric Cancer.
Dr. George T. Pack, New York, The Extension of Radical Surgery in the Treatment of Gastric Cancer.
Dr. Andrew C. Ivy, Chicago, Effect of Methylcholanthrene Orally in the Rabbit.
Dr. Leon Schiff, Cincinnati, Gastric Secretion of Radioactive Iodide in Both Health and Gastric Disease.
Dr. Alexander Brunschwig, Chicago, Concentration of Quinine in Gastrointestinal Cancers.
Drs. George N. Papanicolaou and William A. Cooper, New York, The Cytology of the Gastric Fluid in the Diagnosis of Carcinoma of the Stomach.
Dr. Franklin Hollander, New York, Experimental Exhaustion of the Gastric Mucous Barrier in Dogs and a New Technic for Studying the Cytology of Gastric Aspirates in Man.
Dr. Mandred W. Comfort, Rochester, Minn., Gastric Acidity Before and After the Development of Carcinoma of the Stomach.
Dr. Morris E. Dailey, Los Angeles, The Role of Cancer Prevention Clinics in the Detection of Early Gastric Cancer.
Drs. David State and Owen H. Wangensteen, Minneapolis, Studies of Precursor Groups of Gastric Cancer.
Dr. Frederic E. Templeton, Seattle, X-Ray Diagnosis of Early Gastric Lesions.
Dr. Marie Ortmayer, Chicago, Biologic Characteristics of Asymptomatic, Nonpalpable Tumors of the Rectum and Comparison with the Stomach.

Participating in the general discussion will be Drs. P. R. Peacock, Glasgow Royal Cancer Hospital, and Walter L. Palmer, University of Chicago.

Istanbul Hospital Seeks Surgeon.—The American Hospital of Istanbul, now renamed the Admiral Bristol Hospital, is looking for a young American surgeon skilled in surgery of the chest. The Ministry of Public Health of the Turkish republic has agreed to give the American physician appointed a five year contract, renewable at the end of five years, to serve as a government expert, his specific task being to organize and supervise the chest surgery service in the Haydar Pasha contagious diseases hospital in Istanbul, where there are 80 beds for pulmonary tuberculosis. He is to give two or three mornings a week to this work, for which he will receive from the Turkish government a nominal salary of Ltqs. 100 a month; the remainder of his time will be devoted to the Admiral Bristol Hospital. In case a suitable candidate is found, the hospital is prepared to engage him on a full time basis. The exact amount of salary is impossible to fix at the present time owing to abnormal living costs in Istanbul. However, the salary paid would be adequate to cover his traveling expenses, his living costs on a comfortable basis in this city and insurance or annuity payments in the states sufficient to guarantee him adequate retirement income. The correspondence incident to this position was sent to THE JOURNAL by the Department of State, Washington, D. C. Dr. Lorrin A. Shepard has been American director of the Admiral Bristol Hospital since 1927.

Proposed Changes for Red Cross.—Fundamental changes in the organization structure of the American Red Cross were adopted by the present governing body, the Central Committee, at its September meeting in Washington. The changes were recommended by a nationally representative advisory committee appointed last March by Basil O'Connor, national chairman, to study the organization of the Red Cross in the light of the tremendous growth in its membership and services to the people since 1905, when its present congressional charter was granted. Announcing the action at the recent meeting after transmitting the recommendations to the chapters, Mr. O'Connor said they are of greatest significance to the Red Cross organization at all levels. The recommended revisions to the charter of the organization, unchanged since 1905, provide at the national level for greatly increased representation from the chapters and from the public at large on the national governing body and provide at the chapter level for participation by the membership in all chapter operations. Most significant changes include:

Expansion of the present governing board from eighteen members to fifty members, thirty of whom would be drawn from local chapters under a system of nomination and election and twelve of whom would be elected to represent the national interests at large.

A system of regular rotation in office of the governing bodies in chapters as well as in the national organization.

Discontinuance of the Board of Incorporators provided for in the 1905 charter.

A provision enabling any twenty-five members to appeal to the national organization basic grievances as to matters of chapter procedures.

A provision allowing the establishment of committees chosen by the chapters within each state for the purpose of liaison with state relief, health and welfare agencies.

A new system of auditing separately all accounts of local chapters as well as of the national organization.

Elimination of present classification of memberships according to sums contributed.

At present the Central Committee or governing board of the Red Cross consists of eighteen persons. Six are chosen by chapter delegates, six appointed by the President of the United States and six named by the Board of Incorporators, a body of sixty-five persons initially named in 1905 for the purpose of bringing the corporate organization into being. The incorporators have elected their own successors since that time. The President of the United States appoints the national chairman as well as five other members to the Central Committee from the Departments of State, War, Navy, Treasury and Justice. Under the proposed changes, the Central Committee would be increased to fifty members and its name changed to the Board of Governors. Of the fifty members, thirty would be elected by delegates of the chapters at the national convention held each year, twelve would be elected by the Board of Governors itself as members-at-large, and eight would be selected by the President of the United States, of whom one would be designated by him as president of the Red Cross. Among those selected by the President of the United States from government departments and agencies, at least one and not more than three would be chosen from the armed forces. The election of the governors by the chapters at the national conventions would be under procedure insuring geographic distribution as well as representation of chapters of all sizes.

CORRECTION

Typhoid Deaths.—In the list of deaths from typhoid published in THE JOURNAL July 6 the statement was made that Omaha, although in the first rank, had a typhoid death rate of 0.4 per hundred thousand of population. Information has now been received indicating that the report from Omaha was in error and that there were no deaths from typhoid in Omaha during the year covered by the tabulation.

Deaths

Alfred Iverson Folsom ⊕ Dallas; Southwestern University Medical College, Dallas, in 1908; born in McGregor, Texas, May 9, 1883; carried on postgraduate work at the Mayo Clinic, Rochester, Minn.; joined the staff of Baylor University College of Medicine, Dallas, in 1921, serving as professor from 1923 to 1943, when he accepted a similar position at the then new Southwestern Medical College; vice chairman of the medical board of Baylor University Hospital, created in 1946 to supervise teaching program; chief of the department of urology, Parkland Hospital, Dallas, since 1923; honorary professor of urology, University of Guadalajara, Guadalajara, Jalisco, Mexico; fellow of the American College of Surgeons and a specialist certified by the American Board of Urology; member of the Texas Surgical Society and the South Central Urological Association, having been president of both, the Dallas County Medical Association, the Texas State Medical Association and the Dallas Southern Clinical Society; chairman of the Section on Urology, American Medical Association, in 1931 and member of its House of Delegates in 1933; president of the American Urological Association at the time of his death, October 3, aged 63, which resulted from an automobile collision.

Daniel Cleveland Patterson ⊕ Bridgeport, Conn.; College of Physicians and Surgeons, Baltimore, 1906; born in New Brunswick, Canada, Oct. 1, 1882; member and past president of the state board of medical examiners, Connecticut State Medical Society and the New England Surgical Society; member of the American Association for the Surgery of Trauma; fellow of the American College of Surgeons; member of the founders group of the American Board of Surgery; an officer in the medical corps of the U. S. Army, serving overseas during World War I; on the staff of the Bridgeport Hospital; died September 12, aged 63, of massive subarachnoid hemorrhage and coronary arteriosclerosis.

Thomas Almy ⊕ Fall River, Mass.; Harvard Medical School, Boston, 1909; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; member of the New England Obstetrical and Gynecological Society, of which he had been vice president and president, and the New England Pediatric Society; served on the staffs of the Union and Fall River General hospitals; died September 6, aged 63, of arteriosclerosis.

Charles Marion Anderson, Huntington, W. Va.; University of Louisville (Ky.) Medical Department, 1894; died September 4, aged 80, of senility and uremia.

Sanford Milton Blunk ⊕ Virden, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1911; served as member and president of the Virden Community High School Board; died in St. John's Hospital, Springfield, September 8, aged 68, of metastatic carcinoma following chronic exposure to x-ray radiation to hand.

Albert Charles Carter, Pensacola, Fla.; Vanderbilt University School of Medicine, Nashville, 1910; member of the American Medical Association; on the staff of Pensacola Hospital; died September 1, aged 59, of coronary thrombosis.

Cline M. Chipman ⊕ Washington, D. C.; George Washington University School of Medicine, Washington, 1907; associate in anesthesia at his alma mater; member of the American Society of Anesthetists; on the staffs of the George Washington University, Emergency and Gallinger hospitals; found dead September 7, aged 62.

Frank S. Davidson, Chicago; Rush Medical College, Chicago, 1897; member of the American Medical Association; formerly on the staffs of the Ravenswood and Alexian Brothers' hospitals; died September 27, aged 71, of cardiovascular renal disease.

Homer Willard Davis, Alton, Ill.; Washington University School of Medicine, St. Louis, 1900; member of the American Medical Association; fellow of the American College of Surgeons; chief of surgery at the Alton Memorial Hospital and surgical consultant to St. Joseph's Hospital; died September 5, aged 72, of carcinoma of the liver.

James William Davis, Ozark, Ark. (licensed in Arkansas in 1903); died September 12, aged 78, of strangulation of a loop of bowel by Meckel's diverticulum.

William Eugene Delaney Jr., ⊕ Williamsport, Pa.; Jefferson Medical College of Philadelphia, 1923; fellow of the American College of Surgeons; on the staff of the Williamsport Hospital, where he died September 11, aged 52, of cirrhosis of the liver and duodenal ulcers.

Frank Gerald Douglass ⊕ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1910; on the staffs of the Englewood and St. George hospitals; died September 11, aged 60, of chronic myocarditis.

George Lefferts Fox ⊕ Hartford, Conn.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1924; formerly director of health education at Hartford Public High School; served on the faculty of the University of Connecticut in Storrs; at one time affiliated with the Lamont Infirmary, Exeter Academy, Exeter, N. H.; member of the New Hampshire Medical Society; died in the Hartford Hospital September 1, aged 59, of coronary thrombosis.

Frederic Michael Groner, Yorkville, Ill.; Loyola University School of Medicine, Chicago, 1921; for many years county coroner; on the staff of St. Joseph Mercy Hospital in Aurora; died September 9, aged 63, of chronic endocarditis.

John Alexander Hembree, Pearson, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1905; member of the American Medical Association; formerly an officer in the Civilian Conservation Corps; at one time served as a captain in the medical reserve corps of the U. S. Army, stationed at Camp Shelby, Miss.; major in the medical reserve corps of the U. S. Army, not on active duty; died September 15, aged 67, of heart disease.

Mordecai Laughlin Howard, Danville, Ill.; Pulte Medical College, Homeopathic, Cincinnati, 1891; member of the American Medical Association; on the staff of the Lake View Hospital, where he died September 16, aged 79, of carcinomatosis.

Irvin F. Hummon ⊕ Oak Park, Ill.; Chicago College of Medicine and Surgery, 1917; died September 26, aged 72, of coronary occlusion and arteriosclerosis.

Lee F. Hunt ⊕ Anderson, Ind.; Kentucky University Medical Department, Louisville, 1903; formerly secretary of the Madison County Medical Society; an officer in the medical corps of the U. S. Army, serving overseas during World War I; affiliated with the St. John's Hickey Memorial Hospital, serving at one time as president of the staff; died September 9, aged 69, of massive retroperitoneal hemorrhage and dissecting abdominal aneurysm.

Joseph Bolton Knipe, Sparkill, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1903; served during World War I; died September 4, aged 75, of heart disease.

John Liebau ⊕ Chicago; Bennett Medical College, Chicago, 1914; died September 24, aged 76, of coronary thrombosis.

Hermann Robert Markt, Wingdale, N. Y.; Schlesische-Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau, Prussia, Germany, 1923; affiliated with the Harlem Valley State Hospital; died July 4, aged 45, of coronary thrombosis.

Eugene Augustus Meacham ⊕ South Amboy, N. J.; New York University Medical College, New York, 1898; medical examiner for the Middlesex County Draft Board during World War I; affiliated with Roosevelt Hospital in Metuchen and the South Amboy Memorial Hospital; died September 24, aged 73, of endocarditis.

John Ray Newcomb ⊕ Indianapolis; Medical College of Indiana, Indianapolis, 1904; served during World War I; chairman of the Marion County Procurement and Assignment Service during World War II; colonel, medical reserve corps, U. S. Army, not on active duty; died in the Methodist Hospital September 3, aged 66, of myocardial failure.

Adolph Benedict Schneider ⊕ Cleveland; Cleveland Medical College, 1894; on the staff of the Huron Road Hospital in East Cleveland; at one time professor of medicine and physical diagnosis at the Cleveland Homeopathic Medical College; died in the Memorial Hospital, North Conway, N. H., September 3, aged 79, of injuries received in an automobile accident.

Barney Dunbar Sibley, Birmingham, Ala.; Birmingham Medical College, 1898; member of the American Medical Association; formerly health officer of Warrior; died in St. Vincent's Hospital September 5, aged 75, of cerebral hemorrhage and cardiovascular renal disease.

Ernest Carlton Wood, Bloomfield, Ky.; Kentucky University Medical Department, Louisville, 1906; member of the American Medical Association; died August 15, aged 68, of cerebral hemorrhage.

Irving Zahler, St. Petersburg, Fla.; Long Island College Hospital, Brooklyn, 1918; died August 15, aged 51, of pulmonary edema.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Oct. 26, 1946.

Test of the Sensitivity of Bacteria to Penicillin and Sulfonamides

At a recent meeting of the Academy of Medicine Lecocq and Chauchard (noted for his studies on chronaxia) and Mrs. H. Mazoue presented a new method for determining the penicillin and sulfonamide sensitivity of bacteria. The authors made studies on the white rat, by oral or parenteral routes, the penicillin and the "para-aminophenyl sulfonamide" : 1.162 F. They found an increase of the nervous chronaxia and a diminution of the muscular chronaxia. The consecutive ingestion of two drops of a suspension of bacteria (corresponding to 500 million organisms) treated with formaldehyde and heated at 149 F. produced the following effects: The resisting bacterium inhibits the disturbances and brings the chronaxia back almost to normal, the sensitive bacteria leave it as altered by penicillin and sulfonamides. The authors think that the exotoxins or endotoxins with which the resisting bacteria are endowed hinder in vivo the action of penicillin and sulfonamides on the neuromuscular system. This test shows the sensitivity or the resistance of bacteria to penicillin and sulfonamides by a series of chronaximetric readings made within the twenty minutes following the ingestion or the injection of these products made after a previous ingestion of bacteria treated with formaldehyde and heated.

Congress of French Speaking Electroradiologists

The Congress of French Speaking Electroradiologists took place in Paris from the 9th to the 12th of October. Among others, important Swiss, Dutch and Belgian delegations were present. Baudouin and Fischgold read papers on the development and prospects of clinical electroencephalography. Lachapelle of Bordeaux reported on chronic vertebral rheumatism. Lamarque and Gros of Montpellier reported experiments on contact radiotherapy in rectal cancers. In case of nonstenotic cancer the authors use tubes of the Philip type, the direction of the beam being in the axis of the tubes. The three weeks course comprises two weekly treatments, each consisting of 2,500 roentgens. In 50 cases (31 not extirpable and 19 inoperable, mostly on account of the general condition) there have been 6 deaths, 12 apparent recoveries (4 of which date back from thirteen to seventeen months) and 12 improvements; in 16 patients the course of treatment is not yet finished. The authors have seen 4 cases of cylindric epithelioma regressing rapidly and completely; in a few months the surface of the mucosa becomes normal again. The authors emphasize that it is too soon to appreciate the absolute efficacy of this treatment, but Chaoul's statistics (Germany) covering a much longer period confirm this success. These statistics, published in 1943, show 62 recoveries among 104 cases treated from two to eight years previously.

Cottenot and Bourdon reported results obtained from December 1942 to January 1945 at the St. Louis Hospital by contact radiotherapy on 473 patients showing 761 dermatologic disorders. In 113 cases of epithelioma of the face they had 90 per cent recoveries together with 70 per cent of esthetic cicatrization and this after a lapse of one to three years. The most interesting results were obtained on cancers of the commissure of the lips, of the eyelids, of the nose and of the pinna. Sixteen patients were nonsterilizable. In 21 cases of angioma of children under 2 years there were 15 very good results, 2 good and 3 moderately good. Of 15 keloid cicatrices there were 11 very good and 4 good results. The treatment of 500 warts, especially plantar warts, has given quick results. It is the rapidity of the treatment of benign cutaneous disorders that the author emphasizes.

Inauguration of the Royal Institute of Cardiology

The inauguration of the Institute of Cardiology took place on June 15-16 under the presidency of Professor Gallavardin in the presence of its founder, Professor Laubry, a member of the institute, and of Professors Donzelot, Lian, Hermann and Giraud and of numerous representatives of the medical profession of France, Belgium, Canada, Greece, Lebanon and Mexico. The creation of this center of research was considered by Professor Laubry in 1938 but was delayed by the war and the Nazi occupation; thanks to the activity of its promoters, it has been realized after the liberation. Laboratories of physiology provided with the newest apparatus and a modern hospital are at the disposal of Professor Jourdan, scientific director of the institute.

New Dean of Paris Faculty of Medicine

Professor Baudouin having retired, the Paris Faculty of Medicine has elected as dean for five years Professor Leon Binet. He has been titular chairman of the department of physiology of the Paris Faculty of Medicine since 1930 and a member of the Academy of Medicine since 1939. He had also been a member of the institute since 1942.

NETHERLANDS

(From Our Regular Correspondent)

AMSTERDAM, Oct. 26, 1946.

Camp Vertigo

In an article published in the *Nederlandsch tijdschrift voor geneeskunde* **90:**1000, 1946 Dr. J. Kuilman has reported his experience with 412 cases diagnosed in war prisoners in Batavia during 1944 and 1945. The patients complained of vertigo of one to fifteen minutes' duration from once or twice a week to several times a day. The recumbent position did not prevent it, but sudden movements or turning the head to one side resulted in heavier types of attack accompanied with nausea and vomiting. Headache and uncertainty of gait was experienced in the intervals. On turning the eyes laterally one noticed nystagmus, which persisted as long as one kept looking to that side. During nystagmus there were attacks of vertigo and nausea. There was a tendency to fall to the side to which the eyes were turned. Labyrinthine and lateral nystagmus interfered with each other in the sense of homolateral synergism or contralateral antagonism. Patients sitting inside a vertically black and white striped rotating cylinder exhibited the phenomenon of optic nystagmus, which in its turn interfered with the lateral nystagmus much as the labyrinthine nystagmus did. Vertigo, nausea and falling to one side were frequent in this experiment in patients with camp vertigo. Of the patients with these complaints, 37 were "camp deaf". They were deaf for low tones, whereas distant deafness was less. The deafness was not vestibular. Many of these patients with camp vertigo have suffered from intestinal trouble and malnutrition and they had burning feet, camp eyes, pellagra, beriberi and digestive disorders. These additional conditions confirmed the impression of a deficiency disease resulting in a disorder of the supranuclear mechanisms that are concerned with the coordination of eye movements and equilibrium. There was no indication of peripheral vestibular damage. It is suggested that deficiency of B_2 vitamins would underlie the condition of mainly neurologic character. Yeast gave benefit as long as it was available.

Nicotinic acid amide gave some improvement. (It came from a supply of the American Red Cross in 1945.) Yeast treatment was found most efficient of all, and it had to be continued for months before all the symptoms disappeared.

Prostatism Coincident with Periurethral Adenoma

In a dissertation presented to Leiden University Dr. J. Glazenburg stated that treating male mice with estrogens results in a considerable increase in the weight of the bladder and in hypertrophy of the two smooth muscle sphincters and of the external striated sphincter. Metaplastic changes in the coagulating gland are reminiscent of those found in the human periurethral glands, but owing to the difference in topography a mechanical obstruction to micturition cannot be inferred from this condition. Testosterone counteracts the morphologic and functional effects of estrogens, at least partially. The experimental technic consisted in measurements of opening and closing pressure of the sphincter system and in that of the rapidity of outflow. Anesthetics reduce an increased resistance; therefore a reflex mechanism must be assumed. Results obtained with curare and papaverine show that the external sphincter, though hypertrophic, does not materially contribute to the resistance of emptying. Experiments with atropine and ergotamine show that both cholinergic and adrenergic stimuli account for the resistance opposed to micturition by the internal sphincter. A disturbance of coordination between the smooth muscle sphincter and the detrusor systems accounts for the artificial prostatism of the mouse and probably for that condition in man. The functional disturbance fully accounts for difficult starting, inhibited flow and incomplete emptying of the bladder. Incoordination between sphincter and detrusor leads to functional hypertrophy of the latter. The loop of Heiss (Wesson), though included in the internal sphincter, forms an integral part of the detrusor and it hypertrophies along with the latter, thereby adding to the resistance to emptying. These are the cholinergic components of the system. To the detrusor hypertrophy a concomitant hypertrophy of the adrenergic part of the sphincter is incidental. From such a vicious circle in the functional sphere results the retention syndrome characterized by occasional sudden complete obstruction, whereas a catheter still passes without significant resistance. This whole functional disturbance is claimed to be incidental to periurethral adenoma ("prostatic hypertrophy"), which in its turn has been claimed by previous authors to originate from an endocrine imbalance. There are obvious pathologic and therapeutic implications in this concept.

Electron Microscope

In the town of Delft, where almost three hundred years ago Anthony van Leeuwenhoek made his epochal microscopic observations, an electron microscope was constructed by Mr. J. B. Le Poole. After preliminary attempts a new model of this instrument was completed in 1943. It is pointed out that the features of improvement in comparison with existing models consist of three instead of two "lenses" guiding the beam of electrons and such simplifications as are likely to reduce the cost of the instrument. The work was done in the Laboratories for Technical Physics in the Technical High School of Delft.

Personal

Professor H. Berkelbach van der Sprenkel has been appointed to the chair of histology at Utrecht University made vacant by the retirement of Professor J. Boeke.

At the University of Groningen Professor J. L. B. Engelhard retired from the chair of obstetrics and gynecology, to which Professor R. Remmelts was appointed. Professor H. M. Dekking was appointed to the chair of ophthalmology.

Field Marshal Jan Christiaan Smuts, president of the Union of South Africa, who visited this country October 10-12, was granted the degree of doctor honoris causa in jurisprudence by Leiden University.

The death was announced of Professor A. Klein, emeritus hygienist and pharmacologist of the University of Groningen. He became professor in 1907; during the war he was deported by the occupants to camps for Jews, but he survived to reach the age of 80.

Miscellaneous

At a national congress on health at Amsterdam the problem of rehabilitation of those mutilated in the war was discussed. Twelve hundred people are waiting for protheses to replace lost arms and legs. It was pointed out that provision of these prostheses is urgent both for psychologic and for utilitarian reasons.

At a meeting of the Society of Physicists at Amsterdam attended by forty foreign deputies, the discovery of the Zeeman effect was commemorated. Professor Zeeman in 1896 at the age of 30 discovered the influence of a strong magnetic field on the spectrum of radiation emitted by glowing sodium. He concluded that the phenomenon must be due to negatively charged corpuscles with a mass more than 1,800 times smaller than that of a hydrogen atom. This discovery, for which in 1912 the Nobel prize was awarded to Zeeman and Lorentz, had fundamental importance for subsequent investigations on atomic structure, such as those of N. Bohr and of Schrödinger. The ultimate results of these researches are theories on which the exploitation of atomic energy is based.

BRAZIL

(From Our Regular Correspondent)

São Paulo, Oct. 8, 1946.

Cancer of the Right Colon

Dr. Eurico da Silva Bastos says that although there is no anatomic boundary between the right and the left colon these distinctions are based on the physiopathology, symptomatology and therapeutics of conditions affecting the colon.

An increase in the number of cases of cancer of the colon and an increase in the operability with a simultaneous decrease in the mortality of the operative cases are shown by the statistics. Operations are performed in some 75 per cent of cases diagnosed. The operations are more radical and less dangerous now that we have better preparation and more adequate anesthesia.

Dr. Bastos had 2 survivors one year and two years and a half after the operation.

Dr. Eurico Bastos has observed 9 cases. Two thirds of the malignant lesions of the colon localize to the left and one third to the right.

Functional disturbances in diarrhea or constipation are rare. The presence of visible blood in the stools, which appears in 97.7 per cent of cases of cancer of the rectum and in 46 per cent of cancer of the left colon, appears in only 9 per cent of cases here. Search for occult blood in the stools, repeated x-rays and hematologic examination should be done.

Recently Coller, Kay and McIntyre found 62.5 per cent of metastases for cancer of the right colon and 60 per cent for cancer of the left colon, which would be in agreement with more complete drainage in the cecum than in the descending colon.

Dr. Eurico da Silva Bastos thinks that it justifies right colectomy with terminolateral anastomosis of the ileum to the transverse colon and extensive resection of the colonic segment where it localizes the tumor and of the tissues having blood vascular and lymphatic retia.

Correspondence

IMMUNIZATION AGAINST TETANUS

To the Editor:—I noticed in Queries and Minor Notes in THE JOURNAL, October 5, the following response to a query: "In actual practice the dose of antitoxin for prophylactic purposes has ranged from 1,500 to 20,000 units. In order to avoid confusion and to cover most exigencies, a routine dose of 10,000 American units is indicated as a substitute for the 1,500 units commonly employed. Doses of 20,000 units are justified in the presence of either severe injuries or significant delay in seroprophylaxis. When doses of 20,000 units or more are employed, it is not necessary to make additional injections for any given injury."

I am convinced that the only way in which to discontinue the use of 1,500 units for prophylaxis is the removal of this package from circulation. As long as the various biologic houses distribute these packages they will continue to be used. As long as emergency rooms of hospitals use 1,500 units the physicians will inject this dose and will continue to do so in private practice. As long as teachers in medical schools preach the time dishonored dignity of the 1,500 unit dose, medical students will use the wrong dose as externs, interns and practicing physicians. As long as various agencies, such as state boards of health, distribute the 1,500 unit package, this amount will enjoy popular approval. Sad to relate, packages of 1,500 units are used almost universally for prophylaxis. In fact, the armed forces of the United States have sanctioned the routine use of this dose. This practice continues despite the accumulation of a not inconsiderable literature which describes the occurrence of tetanus despite timely prophylaxis with the customary amounts of antitetanic serum.

I am particularly interested in this problem because of a recent sad experience. A physician saw a girl aged 2 years with a severe burn of her right leg. In addition to treatment of the burn, the child received 1,500 units of antitetanic serum. Nevertheless hyperacute tetanus supervened six days later and the child died after several days despite the most intensive specific and nonspecific treatment. The pharmacist in our local hospital lost his nephew some years ago despite the administration of 1,500 units of antitetanic serum the same day the child sustained a powder burn from a toy pistol. The signs of tetanus appeared six days after the injury, and the child died on the third day of the disease despite intensive serum treatment. The late Dr. Bernard Fantus told me that one of his nephews developed tetanus of moderate severity despite the injection of 1,500 units promptly after injury. The boy recovered in response to general care and intensive serotherapy. E. J. Radley Smith (*Proc. Roy. Soc. Med.* **35**:340 [March] 1942) has reported six failures in serum prophylaxis in a London sector during two years of World War II. Four of the 6 patients developed severe generalized forms of the disease, and 2 of these died despite intensive active treatment. Moreover, in only 1 instance was the incubation period significantly prolonged. Likewise, local tetanus appeared in but 1 patient.

It is to be emphasized that antitetanic serum is a useful prophylactic agent. Its value was demonstrated in World War I, and ample animal experiments have established its unquestionable value. To be of value, antitetanic serum must be potent. Inadequately refrigerated material and material which has deteriorated from other causes must be avoided. It must be injected promptly, or within a day or so, after injury. But, above all, the dose must be adequate.

Passive immunity is a passing (transitory) immunity. Nevertheless the duration of passive immunity may be significantly prolonged by use of the proper dose of antitetanic serum. Thus, 1,500 units confer titrable immunity for two to three weeks, 10,000 units for six to ten weeks and 100,000 units for eight to eleven weeks (Spaeth, Ralph: Serum Therapy of Tetanus, *Am. J. Dis. Child.* **61**:1146 [June] 1941. Cooke, J. V., and Jones, F. G.: The Duration of Passive Tetanus Immunity, THE JOURNAL, April 10, 1943, p. 1201). Hence I feel that, as recommended in the answer to the query, packages of 10,000 to 20,000 units should be used routinely for prophylaxis. However, it is important to emphasize that passive immunity, conferred by antitetanic serum, should be supplemented later by the properly timed inoculation of tetanus toxoid, either alone or combined with other antigens. The customary dosage schedule of tetanus toxoid should be employed. However, the time of its administration should be determined by the dose of antitetanic serum injected. This procedure is justified in terms of the principle that passive immunity interferes quantitatively with the development of active immunity. If one waits six weeks after the injection of 10,000 to 20,000 units there should be a satisfactory response to tetanus toxoid. The simultaneous use of antitetanic serum and tetanus toxoid is not an acceptable procedure. In the event of a later injury considered likely to lead to the development of tetanus, a small booster dose of tetanus toxoid, such as 0.1 cc. of fluid or alum precipitated material (McBryde, Angus, and Poston, M. A.: *J. Pediat.* **28**:692 [June] 1946) will induce antitoxic titers of adequate level and duration. The tetanus toxoid may be injected without performing sensitivity tests, because allergic reactions to tetanus toxoid are extremely uncommon. This statement does not apply to antitetanic serum, which sometimes causes serious allergic responses in previously sensitized persons.

It might be illuminating to invite further discussion of this problem to improve the present dolorous situation.

RALPH SPAETH, M.D., Chicago.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Trade Mark: Use of Red Cross Symbol by Private Manufacturer.—The Federal Trade Commission entered an order prohibiting the defendant from using the words "Red Cross" or displaying the mark of the Greek red cross on, or in connection with the sale of, its products. This order was modified by the court of appeals, and the Federal Trade Commission appealed to the United States Supreme Court.

The defendant manufactures and sells a brand of toilet tissue and paper towels in interstate commerce, on each package or roll of which are a Greek red cross and the words "Red Cross." The defendant has registered the words "Red Cross" and the red cross symbol as a trade mark and featured them in its advertisements and on its letterheads. By section 4 of the American Red Cross act of 1905 it was made unlawful "for any person or corporation, other than the Red Cross of America, not now lawfully entitled to use the sign of the Red Cross, hereafter to use such sign or any insignia colored in imitation thereof for the purposes of trade or as an advertisement to induce the sale of any article whatsoever." This section was amended in 1910 so as to make unlawful the use of the Greek red cross on a white ground or the words "Red Cross" for the purpose of trade or as an advertisement "to induce the sale of any article" or "for any business or charitable purpose" by any person other than the American National Red Cross or its duly authorized employees and agents or the sanitary and hospital authorities of the army and navy. It contains, however, a provision which reads as follows:

> That no person, corporation or association that actually used or whose assignor actually used the said emblem, sign, insignia or words for any lawful purpose prior to January fifth, nineteen hundred and five, shall be deemed forbidden by this act to continue the use thereof for the same purpose and for the same class of goods,

The defendant's use of the trade name and emblem antedated Jan. 5, 1905, but in 1942 the plaintiff charged the defendant with a violation of the Federal Trade Commission act which makes unlawful "unfair methods of competition in commerce, and unfair or deceptive acts or practices in commerce." At a hearing before the commission, the commission found that

> the use by respondent [defendant] of the words "Red Cross" and of the mark of the Greek red cross to designate its products has the tendency and capacity to mislead and deceive a substantial portion of the purchasing public, in that such name and mark represent or imply that respondent's [defendant's] products are sponsored, endorsed or approved by the Red Cross; that the Red Cross is financially interested in the sale of the products; that the products are used by the Red Cross; that the products are manufactured in accordance with sanitary standards set up by the Red Cross; or that there is some other connection between the products and the Red Cross. Not only are these, in the opinion of the Commission, reasonable inferences to be drawn from the use of the name and mark, but the record affirmatively shows that the name and mark are in fact so understood and interpreted by many members of the public.

The commission also found that statements on defendant's products that they are made by defendant and that the name and mark are registered "do not serve to correct the erroneous and misleading impression created through the use of the trade name and mark." Accordingly the commission entered an order which, among other things, forbade defendant from using the words "Red Cross" to describe its products and from displaying the Greek red cross on them. On appeal to the circuit court of appeals, this order was reversed, it being held that the order went beyond permissible limits in forbidding any use of the words and the mark. The court of appeals remanded the case to the commission for the formulation of a new order which, though not forbidding the use of the words and the symbol, might require statements which would avoid any inference that the goods were sponsored or approved or in any way connected with the American National Red Cross.

There is no suggestion that the pre-1905 use of the words and the symbol was an unlawful one. It is argued, however, that although the earlier use may have been lawful, it cannot survive a finding by the commission that the use constitutes an unfair or deceptive act or practice in commerce. It is pointed out that the 1938 amendment to the Federal Trade Commission act gave the commission power to protect consumers, as well as competitors, against unfair or deceptive practices, that there are no exceptions to that broad power and that none should be implied from the Red Cross act of 1910, which, plaintiff contends, confers no general rights but only a limited immunity and should not be construed as exempting pre-1905 users of the name and emblem from regulatory legislation of general application which Congress may from time to time enact for the protection of the public. It is also argued that by the Geneva Convention of 1929, which was ratified by the United States in 1932, the United States agreed to prohibit the use by private persons of the name and the symbol and that the Red Cross act and the Federal Trade Commission act should not be construed in favor of conduct which this nation is under international obligation to terminate.

We agree, however, with the court of appeals, said the Supreme Court. It is apparent from the terms of the 1905 and 1910 acts that Congress was concerned not only with protecting the Red Cross against pretenders but also with protecting the public against the false impression that goods purchased were the products of the Red Cross or were sponsored by it. Congress, however, did not go the full distance. It preserved the right of earlier, good faith users to continue the use of the words and the symbol. It may have concluded that the mark which had been acquired was a valuable business asset which should not be destroyed. Or it may have thought that the extent and manner of the use by the established concerns were not likely to injure the public. Whatever the purpose, continued the court, the fact remains that the good faith use of the mark by the pre-1905 users was intended to be preserved unimpaired. The court would not lightly infer that this specific right was to be swept away under the 1938 amendment to the Federal Trade Commission act; the problem is to reconcile the two acts, if possible, and to give effect to each. That could be done, the court thought, by recognizing that while the good faith use of the words and symbols by pre-1905 users is permissible, the commission may require the addition of language which removes any misleading inference that the products are in fact sponsored, approved or in any manner associated with the American National Red Cross. We only hold, concluded the Supreme Court, that under the facts of this case the commission may not absolutely forbid the use of the words and the symbol by the defendant. Accordingly the judgment in favor of the defendant was affirmed.—*Federal Trade Commission v. A. P. W. Paper Company, Inc., 66 S. Ct. 932 (1946).*

Unlicensed Physician as Expert Witness—The Supreme Court, appellate term, first department, held that it was error for the trial court to exclude the testimony of a medical witness, and a hospital record made at his direction, on the sole ground that the witness was not licensed to practice medicine in New York at the time the record was made.—*Black v. Ackerman, 63 N. Y. S. (2d) 445 (N. Y., 1946).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS
EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Board in Specialties were published in The Journal, Nov. 9, page 601.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, Jan. 21-23. Secretary, State Board of Medical Examiners, B. F. Austin, M.D., 519 Dexter Ave., Montgomery.

Delaware: *Examination.* Dover, Jan. 14-16. *Endorsement.* Dover, Jan. 21. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

District of Columbia:* *Reciprocity.* Washington, Dec. 9. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington.

Florida:* *Examination.* Jacksonville, Nov. 26-27. Sec., Dr. Harold D. Van Schaick, 2736 S.W. 7th Ave., Miami 36.

Indiana: *Examination.* Indianapolis, June. Exec. Secretary, Board of Medical Registration and Examination, Miss Ruth V. Kirk, 627 K. of P. Bldg., Indianapolis.

Kansas: Kansas City, Dec. 4-5. Secretary, Board of Medical Registration and Examination, J. F. Hassig, M.D., 905 North 7th Street, Kansas City.

Kentucky: *Examination.* Louisville, Dec. 16-18. Sec., State Board of Health, Dr. P. E. Blackerby, 620 S. Third St., Louisville 2.

Maryland: *Examination.* Baltimore, Dec. 10-13. Sec., Dr. E. H. Kloman, 1215 Cathedral St., Baltimore 1. *Homeopathic.* Baltimore, Dec. 10-11. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

Massachusetts: *Examination.* Boston, Nov. 19-22. Sec., Board of Registration of Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston 33.

Michigan:* Ann Arbor, Dec. 9-11. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

Minnesota:* Minneapolis, Jan. 21-23. Sec., Dr. J. F. Du Bois, 230 Lowery Medical Arts Bldg., St. Paul 2.

Mississippi: *Reciprocity.* Jackson, Dec. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson 113.

Nebraska:* *Examination.* Omaha, June 1947. Director, Bureau of Examining Boards, Mr. Oscar F. Humble, State Capitol Building, Lincoln.

New Hampshire: Concord, March 13. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

North Carolina: *Examination.* Winston-Salem, Dec. 16-19 postponed. *Endorsement.* Raleigh, Jan. 16. Act. Sec., Mrs. L. McNeill, 226 Hillsboro St., Raleigh.

North Dakota: Grand Forks, Jan. 7-10. Secretary, Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

Ohio: *Examination.* Columbus, Dec. 3-5. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

South Dakota:* *Examination and Reciprocity.* Vermillion, Jan. 21-22. Secretary, Board of Medical Examiners, Dr. Gilbert Cottam, State Capitol Building, Pierre.

Vermont: *Examination.* Burlington, Jan. 31-Feb. 1. Secretary, Board of Medical Registration, Dr. F. J. Lawliss, Richford.

Virginia: Richmond, Dec. 3-6. Secretary, Board of Medical Examiners, Dr. J. W. Preston, 30½ Franklin Rd., Roanoke.

Washington: *Examination.* Seattle, Jan., 1947. Secretary, Mr. Nelson Vaughn, Olympia.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Arizona: Dec. 10. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

Colorado: Denver, Dec. 11-12. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

Iowa: Des Moines, Jan. 14. Corresponding Sec., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

South Dakota: Sioux Falls, Dec. 6-7. Sec., Dr. G. M. Evans, Yankton.

Tennessee: Memphis and Nashville, Dec. 19-20. Sec., Dr. H. W. Qualls, 130 Madison Ave., Memphis 3.

Wisconsin: Milwaukee, Dec. 7. Sec., Professor Robert N. Bauer, 152 W. Wisconsin Ave., Milwaukee 3.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days Three journals may be borrowed at a time Periodicals are available from 1936 to date Requests for issues of earlier date cannot be filled Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested) Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them

Titles marked with an asterisk (*) are abstracted below

American J. Obstetrics and Gynecology, St. Louis

52:1-178 (July) 1946 Partial Index

*New Method of Treatment for Vaginitis and Cervicitis S L Siegler —p 1

*Test for Determining the Time of Ovulation and Conception in Women E J Farris —p 14

Delayed Ovulation, Significant Factor in Variability of Menstrual Cycle I Rossman and G W Bartelmez —p 28

Semen Analysis in 1,500 Cases of Sterile Marriage J MacLeod and R S Hotchkiss —p 34

Weight Control, Diet and Fluid Balance in Pregnancy C H Loughran —p 42

Therapeutic Abortion in General Hospital W T Dannreuther —p 54

Interpretation of Pathogenesis of Pelvic Infection as Determined by Cornual Resection H C Falk —p 66

Clinical Diagnosis of Varying Degrees of Uterine Contraction Rings H W Johnson —p 74

Persistence of Gonococcus in Female Adnexa A Cohn, I Grunstein and C E Heaton —p 83

Intrapartum Fever Preliminary Study L D Odell and E D Plass —p 89

Continuous Spinal Analgesia in Cesarean Section Advantages, Technic and Analysis of 300 Cases J C Ullery —p 100

Rh Factor in Obstetrics M O Belson —p 106

Kielland Forceps for Use in Occipitoposterior and Occipitotransverse Positions J I Kushner and P B Wahrsinger —p 110

Origin of Adrenal-like Tumor of Ovary (Hypernephroma of Ovary, Adrenal Tumor of Ovary, Masculinovoblastoma, Luteoma, Luteinoma) A H Curtis —p 115

Abdominal Pregnancy with Placenta Attached to Spleen D H Kushner and F A Dobrzynski —p 160

New Treatment for Vaginitis and Cervicitis.—Siegler believes that the ideal anti-infective agent should be buffered effectively so as to promote the reestablishment of the physiologically correct acidity and growth of Doderlein's bacilli consistent with a healthy vagina It should be antibacterial so as to control rapidly persistent infections especially in cervicitis requiring electrosurgery, it should be of such a physical consistency as to assure intimate and prolonged contact with vaginal and cervical mucosa, and it should be nonirritating and nontoxic These conditions are most closely approached by an acid jelly containing sulfathiazole, lactic acid, acetic acid, sodium tetradecyl sulfate and polyethylene glycol The jelly is nonirritating, nonstaining and of agreeable odor It spreads over the cervical and vaginal surfaces and is completely soluble in the secretions It does not easily leak out of the vagina unless the discharge is profuse It has a mild but definite astringent effect on the vaginal mucosa Use of the jelly has resulted in excellent control of vaginitis of trichomonal, monilial, gonococcal and nonspecific origin in 93 per cent of the cases studied, and in permanent cure in 83 per cent The period of convalescence can be shortened and annoying symptoms reduced by using the jelly before and after such procedures as conization coagulation, cautery and plastic repairs and other intravaginal surgery Healing was complete within an average time of five weeks, with a minimum of sequelae The convenience and simplicity of the single dose disposable paper applicator facilitates intravaginal medication in the office and in the patient's home

Time of Ovulation and Conception in Women—Farris determines ovulation by the reaction of the ovary of the immature white rat to the urine of the patient If ovulation is not taking place, the patient's urine has no effect on the ovary of the rat, if it is taking place the rat's ovaries become hyperemic Urine passed on arising in the morning is employed The test animal is an immature Wistar rat Two cc of the urine is injected subcutaneously into each of 2 animals At the end of two hours the rats are killed by illuminating gas Their abdomens are opened immediately Each ovary is inspected, and its degree of redness is compared with the colors of the Munsell color chart Observations were made on 88 married and 12 unmarried women Of the married women 76 wished to become pregnant Fifty of them had been inseminated artificially for periods varying from a few months to several years, with no conceptions resulting Most of the women who were tested showed a positive test for three or four successive days each month at the usually accepted ovulation time This is termed the normal reaction A few women showed a positive test for one or two days at approximately the same period sometimes followed by a day or more of negative test, then a second positive test for one or two days This is termed abnormal reaction Results thus far indicate the third or fourth day of a normal reaction as the time when insemination is most likely to produce pregnancy Women have not become pregnant in months in which they exhibited no reactions or abnormal ones

American Journal of Public Health, New York

36:837-962 (Aug) 1946

Manitoba Health Plan F W Jackson —p 837

Plague Control with DDT and 1080 Results Achieved in Plague Epidemic at Tumbes, Peru, 1945 A Macchiavello —p 842

Education of Medical Students in Preventive Medicine W G Smillie —p 855

Training for Health Education I V Hiscock —p 859

Problems of Recruitment and Training J G Stone —p 864

Accident Prevention D B Armstrong and W G Cole —p 869

Practical Aspects of Communicable Disease Control in Schools S. Frant —p 875

Developments in Science of Nutrition During World War II C G. King and O Salthe —p 879

Study of Nutritional Status and Food Habits of Otomi Indians in Mezquital Valley of Mexico R K Anderson, J Calvo Gloria Serrano and G C Payne —p 883

Proposed Report on the Educational Qualifications of Health Officers W P Shepard —p 904

Medical Care in Maryland R H Riley —p 908

Health Insurance Plan of Greater New York General Statement of Its Principles and Program D A Clark —p 912

Archives of Otolaryngology, Chicago

44:129-252 (Aug) 1946

*Irradiation of Nasopharyngeal Lymphoid Tissue An Evaluation L R. Boies —p 129

Plastic Repair of Deflected Nasal Septum S Fomon, V R Syracuse, N Bolotow and M Pullen —p 141

Modified Radical Mastoidectomy Indications and Technic (Semiradical Mastoidectomy Modified Tympanomastoidectomy, Heath Mastoidectomy, Bondy Mastoidectomy) W L Simpson —p 157

Traumatic Palatal Fistula L E Wible and J C Howard —p 159

Absence or Near Absence of Excitant Effects from Administration of Tuamine E M Boyd, Joan Copeland and F H Lapp —p 166

Penicillin in Field of Otolaryngology Clinical and Bacteriologic Studies, with Special Reference to Topical Applications Elizabeth DeBlois —p 174

Diplacusis and Acuity of Hearing J P Minton —p 184

*Laryngeal Tuberculosis O Auerbach —p 191

Nasopharynx in Epidemic of Streptococcic Infection O B McGillicuddy —p 202

Cartilaginous Septum in Reconstruction of Nose Modified Procedure. E J Elsbach —p 207.

Otitis Media and Complications B R Dysart —p 223

Irradiation of Nasopharyngeal Lymphoid Tissue.—Boies says that the lymphoid tissue of Rosenmuller's fossa and the nodules which occur in the mucosa of the orifice of the eustachian tube and within its lining are now considered to play an important role in early hearing loss in children In children 8 to 14 years of age there is a high incidence (nearly 40 per cent) of impairment of thresholds for some of the tones above C4, that is, for frequencies higher than 2,048 cycles per second A common cause of this hearing loss is to be found in the catarrhal changes of the middle ear which originate from infected lymphoid tissue in the nasopharynx Irradiation of pharyngeal lymphoid tissue is not new The author's observations of this treatment were made on 73 patients Small doses of radium or radon filtered so as to yield chiefly the beta rays seem effective in controlling the pathologic effect of small amounts of this tissue in its relation to the normal function of the eustachian tube The dose is so small that no local reaction is observed The role of hyperplastic lymphoid tissue in blockage of the eustachian tube has a new interest through observations of air corpsmen in whom the condition called aero-otitis media developed.

Laryngeal Tuberculosis.—Auerbach and his colleagues routinely examined the larynx in the course of necropsies for gross and microscopic pathologic changes. An opportunity was thus afforded to study the mode of development and the progression of laryngeal tuberculosis as well as its relationship to tuberculosis in other parts of the body. Laryngeal tuberculosis was present in 304 (37.5 per cent) of 811 cases of tuberculosis which came to necropsy. In all but 2 instances it developed as a direct infection from positive sputum in chronic pulmonary tuberculosis. Tuberculous foci, with and without central zones of caseation, form in the walls of the larynx as a result of tubercle bacilli which enter through the ducts of the mucous glands. Ulceration develops either through pressure atrophy of the mucous membrane by the tuberculous foci or by caseous necrosis of the overlying epithelium as the tuberculous areas enlarge. The further progression of the ulcerative process is similar to that in other parts of the body. Ulcers were found most frequently on the true vocal cords. Healing may occur in any stage of anatomic development, usually in cases in which underlying chronic pulmonary tuberculosis undergoes anatomic healing. In some instances healing and progression keep pace in the same larynx, resulting in a pronounced thickening of the wall, nodular protrusions into the lumen and narrowing of the canal.

Archives of Pathology, Chicago

42:1-112 (July) 1946

Tumor of Tactile End Organs. J. Cammermeyer.—p. 1.
Pathologic Aspects of Atmospheric Blast Injuries in Man. H. Cohen and G. R. Biskind.—p. 12.
Structure of Testis in Infancy and Childhood, with Discussion of So-Called Underdeveloped Testis. P. Gruenwald.—p. 35.
*Renal Changes Associated with Chloride Deficient Diet in Rat. Elizabeth Lowenhaupt and D. M. Greenberg.—p. 49.
Angiomatoid Formations in Genital Organs With and Without Tumor Formation. R. P. Morehead.—p. 56.
Hepar Lobatum: Clinical Significance of Anatomic Changes. D. Symmers and D. M. Spain.—p. 64.
Birefringence in Tissues. A. L. Lichtman and J. R. McDonald.—p. 69.
*Experimental Atherosclerosis: IX. Effect of Prolonged Feeding of Egg Yolk in Rats. J. A. Rosenkrantz and M. Bruger.—p. 81.

Chloride Deficiency and Renal Changes.—Lowenhaupt and Greenberg say that chemical changes occurring in tissues and body fluids of rats fed a diet deficient in chloride consist in a lowering of the concentration of blood chloride, an increase of the concentration of blood bicarbonate and an increase of the urinary excretion of citrate, all indicative of chronic alkalosis. There is a characteristic shift in the water of the body, in which the apparent extracellular phase is increased in most of the tissues. As happens with most deficiencies, the growth of the rats is stunted. The deficient animals attained only about 50 per cent of the weight of the controls when the chloride content of the diet was reduced to between 2 and 5 mg. per hundred grams of food. A renal lesion uniformly develops in rats maintained on a chloride deficient diet. Early in the process calcium is precipitated in the lumens of collecting tubules, with consequent blocking and hydronephrosis. A granulomatous inflammatory response is a characteristic early reaction to the foreign material and to the degenerating tubular epithelium. Chronic alkalosis is suggested as the basis of the precipitation of calcium.

Experimental Atherosclerosis.—The feeding of cholesterol will produce atherosclerosis readily in rabbits and with more difficulty in guinea pigs. Attempts to obtain these vascular changes in rats, mice, cats, dogs, monkeys, goats, foxes, chickens, pigeons and parrots have been unsuccessful. Hypercholesteremia and atherosclerosis readily develop in the rabbit because this animal is unable to metabolize exogenous cholesterol. Since diets enriched with egg yolk have been shown to produce hypercholesteremia in man, monkeys and dogs without vascular sclerosis, Rosenkrantz and Bruger decided to extend this investigation to include white rats. They found that the prolonged feeding of egg yolk powder to rats augmented the cholesterol content of the blood and the liver but failed to produce atherosclerosis of the aorta. The lecithin content of the liver was not increased by the feeding of egg yolk. Deposits of fat appeared in the liver six to nine months after the feeding of egg yolk was begun. Under the conditions of this experiment the lecithin present in egg yolk failed to inhibit lipoid infiltration of the liver. During the latter months of the experiment the rats fed egg yolk powder gained weight more rapidly than did the control rats. The systolic blood pressure was not elevated in rats fed egg yolk powder.

Cancer Research, Baltimore

6:385-448 (Aug.) 1946

Hypophysectomy in Mice, with Special Reference to Mammary Cancer: Report on Outcome of 351 Operations. R. Korteweg and F. Thomas.—p. 385.
Heterologous Transplantation of Mouse Tumors Induced in Vitro. H. S. N. Greene.—p. 396.
Production of Carcinogenic Agent in Degradation of Cholesterol to Progesterone. F. Bischoff and J. J. Rupp.—p. 403.
Physiologic Studies on Tumor Inhibiting Agents: II. Effect on Rectal Temperatures in Normal Rabbits of Serratia Marcescens Tumor Necrotizing Polysaccharide of Shear. L. V. Beck and Mary Fisher.—p. 410.
Induction of Sarcoma of Liver in Rat with Methylcholanthrene and Benzpyrene. M. J. Eisen.—p. 421.
Nucleic Acids in Human Tumors. R. E. Stowell.—p. 426.
Multiple Malignant Growths. H. L. Lombard, M. L. Levin and S. Warren.—p. 436.

Georgia Medical Association Journal, Atlanta

35:189-216 (July) 1946

Early Diagnosis of Neurosurgical Lesions. W. McK. Craig.—p. 189.
Correction of Nature's Mistakes by Operative Intervention. O. S. Lowsley.—p. 193.
The Medical Practice of Dr. W. B. Freeman: Carnesville, Georgia, 1823-1826. J. Krafka.—p. 197.
Benign Papilloma of Ureter. E. Felber.—p. 200.

35:217-242 (Aug.) 1946

Tumult in Medicine—Psychosomatic Analysis. R. H. Chaney.—p. 217.
Visualization of Traumatic Popliteal Aneurysm Before and After Operation: Case. T. Harrold and M. Mass.—p. 222.
Etiology of Convulsions. H. S. Swanson.—p. 225.
Treatment of Epilepsy in Children with Sodium Dilantin. B. Bashinski.—p. 228.
Observations of Electroencephalic Patterns in Convulsive Disorders of Suspected Endocrine Origin: Preliminary Report. Estelle P. Boynton.—p. 229.
Lead Pencil in Ileum: Case. M. W. Anderson.—p. 235.

Journal Pharmacology & Exper. Therap., Baltimore

87:193-328 (July) 1946. Partial Index

Action of Sodium Salicylate and Sulfadiazine on Hyaluronidase. F. Guerra.—p. 193.
Digitalis: II. Chemical Evaluation of Tablets of Digitoxin. F. K. Bell and J. C. Krantz Jr.—p. 198.
Chemotherapy of Plasmodium Knowlesi Infections in Macaca Mulatta Monkeys. A. P. Richardson, R. I. Hewitt, L. D. Seager, M. M. Brooke, F. Martin and H. Maddux.—p. 203.
Studies on Pharmacology of Salicylates. P. K. Smith, Helen L. Gleason, C. G. Stoll and S. Ogorzalek.—p. 237.
Pharmacodynamic Studies of New Antihistamine Agent, N'-Pyridyl-N' Benzyl-N-Dimethylethylene Diamine HCl, Pyribenzamine HCl: I. Effects on Salivation, Nictitating Membrane, Lacrimation, Pupil and Blood Pressure. F. F. Yonkman, Dorothy Chess, D. Mathieson and Nicoline Hansen.—p. 256.
Barbiturate Antagonism of Isonipecaine Convulsions and Isonipecaine Potentiation of Barbiturate Depression. E. L. Way.—p. 265.
Pharmacology of Di-Isopropyl Fluorophosphate (DFP) in Man. J. H. Comroe Jr., J. Todd and G. B. Koelle.—p. 281.
Studies with Tetrazole Derivatives. E. G. Gross and R. M. Featherstone.—p. 291.
Specificity of Sex Hormones on Tissue Aldehyde Shift in Rat Kidney and of Fuchsin Sulfurous Acid Reagent on Aldehydes. K. A. Oster and Jean G. Oster.—p. 306.
Chemotherapeutic Properties of Sulfanilanilides. L. H. Schmidt and Clara L. Sesler.—p. 313.

Laryngoscope, St. Louis

56:325-392 (July) 1946. Partial Index

Labyrinthine Dropsy. J. R. Lindsay.—p. 325.
*Use of Antireticular Cytotoxic Serum (ACS) in Atrophic Rhinitis (Ozena). C. C. R. Jackson.—p. 342.
Oral Penicillin in Otolaryngology. D. M. Lierle and W. D. Paul.—p. 352.
Sound Source for Otologist. H. B. Perlman.—p. 360.

Antireticular Cytotoxic Serum in Atrophic Rhinitis.—The serum used by Jackson was prepared in rabbits on the assumption that fewer persons would show allergic skin reactions following the injections. The dosage was 0.5 cc., 1 cc.

and 1 5 cc of a 1 10 dilution of the serum in saline solution hypodermically, with an interval of three days between doses No change was made in the patient's routine of life or nasal hygiene Five weeks after the last injection of serum the patients were reexamined The treatment was employed on 24 patients ranging in age between 22 and 70 years Twenty of the patients had atrophic rhinitis (ozena) and 4 had atrophic nasopharyngitis There was no improvement in the majority of patients, but a few showed some improvement mostly in subjective phenomena No change was noted in the size of atrophic structures The cause of the difference between these results and those reported by the Russians is not obvious

Maine Medical Association Journal, Portland

37:181-206 (July) 1946

Glycerite of Hydrogen Peroxide Evaluation of Its Clinical Effects in Mixed Infections of Skin and Mucous Membranes E A Brown —p 181
Progress in Treatment of Gonorrhea G C Poore —p 185

37:207-230 (Aug) 1946

Presidential Address A P Leighton —p 207
Internal Derangements of Knee Joint W G Dixon —p 214
No Need for Change Every Medical New Deal Less Successful A H Scolten —p 218

New England Journal of Medicine, Boston

235:147-178 (Aug 1) 1946

*Infectious Hepatitis in Massachusetts, with Review of Present Knowledge of the Disease Harriet L Hardy and R Feemster —p 146
Modern Governmental Medical Problems R W Bliss —p 158
Acute Poliomyelitis in Pregnancy Its Occurrence According to Month of Pregnancy and Sex of Fetus L Aycock —p 160
Unusual Case of Foreign Body in Neck —p 162
Diseases of Veins J Homans —p 163
Benign Stricture of Common Bile Duct, Choledochoduodenocholic Fistula, Multiple Abscesses Hepatic, Subhepatic and Diaphragmatic —p 168
Benign Peptic Ulcer —p 171

Infectious Hepatitis in Massachusetts —The clinical material used as the basis of this report was collected by visits to Massachusetts communities from which the disease was informally reported to the department of public health Approximately 175 cases of infectious hepatitis were uncovered in Massachusetts in these investigations, but only 151 case histories are used in this report, since in the remaining cases insufficient data were available The term "infectious hepatitis" is used to designate sporadic cases and "infectious epidemic hepatitis" for groups of cases during outbreaks The term "homologous serum jaundice" is used to refer to hepatitis artificially acquired from any source It is now held that infectious hepatitis is caused by a specific virus The disease confers lifelong immunity in most instances The transmission seems to take place by contact of a susceptible person either with a patient having the disease or with material contaminated by the causative virus It seems certain that the virus can be carried in food It may be carried in water Hardy and Feemster make a plea for the careful handling of infectious hepatitis, since the disease may cause irreversible hepatic changes and seems to be particularly serious in pregnant women Gamma globulin has no place in the treatment of the active phase of infectious hepatitis, but since it has been shown to be capable of producing passive immunity of six to eight weeks' duration it should be useful in the control of small outbreaks

New York State Journal of Medicine, New York

46:1647-1758 (Aug 1) 1946

Protein Deficiency Conditions Observed in Private Practice R R Scobey —p 1691
Chancroid Disease and Its Treatment F C Combes —p 1700
*Use of Penicillin Aerosol in Bronchopulmonary and Sinus Infections A I Barach Bettina Garthwaite and C Rule —p 1703
*Analysis of Surgical Failures and Fatalities Following Thoracolumbar Sympathectomy for Essential Hypertension J W Hinton and J W Lord Jr —p 1714

Penicillin Aerosol in Bronchopulmonary and Sinus Infections.—Barach and his associates report improvements in the original technic of administering penicillin by inhalation, which consist in humidifying the aerosol by passing it over hot water and in eliminating large particles either by a baffle connected to the conventional nebulizer or by an especially constructed nebulizer, both procedures aimed to avoid irritation and red tongue The advantages of administering penicillin by inhalation can be discerned in lung abscess, in sinusitis and in selected cases of bronchiectasis, in each of which bacteria may grow on a fibromucopurulent surface that is not reached by a capillary blood supply The authors describe and illustrate new apparatus

Thoracolumbar Sympathectomy for Essential Hypertension —During the past four years Hinton and Lord have operated on 227 patients for essential hypertension, 152 being operated on by the Smithwick technic Beginning in June 1945 the authors started to extend the operation to the higher thoracic ganglions, and by December 1945 they were including from the third thoracic to the second lumbar inclusive in most operations and always through the fourth thoracic ganglion Twenty-six of the 227 patients died, a mortality of 11 5 per cent The immediate mortality was higher in the more extensive operative procedure The fatalities have been divided into three groups In group 1 all four major organs—eyes, cerebral vessels, heart and kidneys—were involved There were 15 cases in this group, and if the degree of involvement in each organ is graded from 1 to 4 plus, it was found that these 15 cases averaged 12 5 plus out of a maximum of 16 Operative procedure in these cases indicated poor judgment In group 2 there were three organs involved in 7 cases and they averaged 8 plus In group 3 there were two organs involved and 4 cases, with 8 plus In the latter two groups there was some justification for operation, as the organs were not completely damaged by the long standing essential hypertension The authors think that, if the degree of involvement in all organs exceeds 8 plus, it is questionable whether a thoracolumbar sympathectomy will give lasting results

Occupational Medicine, Chicago

2:1-92 (July) 1946

Health Protection in Production and Use of Atomic Energy. W F Bale —p 1
Anthrax Its Diagnosis and Treatment H F Smyth —p 8
Bernardino Ramazzini His Life, Deeds and Book R T Legge —p 22
Importance of Researches on War Gases to Clinical Medicine W. T Longcope —p 34
Surgery in Industry H E Mock —p 45
Disease Resulting from Use of Pneumatic Tools F M Peters —p 55
Practical Benefits of Industrial Health Service V G Heiser —p 67.

Ohio State Medical Journal, Columbus

42:801-888 (Aug) 1946

Considerations on Poliomyelitis J A Toomey —p 825
Evolution of Poliomyelitis Treatment E H Wilson —p 828
Treatment and Results of Treatment in Anterior Poliomyelitis S G Gamble —p 831
Functions of State Health Department in Control of Poliomyelitis R E Heering —p 835
Progress of Research in Poliomyelitis T Francis Jr —p 838
Spontaneous Occlusion of External Iliac Artery Case A R Smith and W G Harding —p 841
Ruptured Congenital Aneurysm of Sinus of Valsalva with Superimposed Endocarditis with Rupture of Aortic Cusp Producing Sudden Death T L Ramsey and V T Mosquera —p 843

Yale Journal of Biology and Medicine, New Haven

18:473 632 (July) 1946

Early Years of Kjeldahl Method to Determine Nitrogen H B Vickery —p 473
Surface Potentials and Peripheral Nerve Injury Clinical Test R G Grenell and H S Burr —p 517
Thiourea and Related Compounds in Treatment of Hyperthyroidism A W Winkler and T S Danowski —p 527
Psychology and Scientific Fallacy C D King —p 541
Dermatoglyphics Significant Patternings of Body Surface H Cummins —p 551
Relationship Between Military Loss Resulting from Casualty and Days Lost from Active Duty H Lamport —p 567
Note on Incidence of Diabetes Mellitus in Fractures of Hip W. E Kenney —p 577
Necrotizing Disease in Rabbits Affecting Fatty and Muscular Tissues Analogies with Weber-Christian Disease of Humans F Duran Reynals —p 583
Clinical Aspects of Evaluating Analgesic Agents, with Notes on Safety of Morphine R C Batterman —p 595
Studies on Resistance to Antibiotics I Action of Penicillin on Some Gram Positive and Gram Negative Organisms and Its Potentiation by Various Inhibitors H P Treffers —p 609

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Urology, London

18:53-104 (June) 1946

*Embryoma of Kidney in Adult. R. M. Hill.—p. 53.
Retrograde Movement of Ureteric Calculi. T. Moore.—p. 60.
Infection of Urinary Tract in Female Due to Trichomonas Vaginalis. B. Williams.—p. 63.

Embryoma of Kidney in Adult.—Thirty-five cases of Wilms' tumor have been reported in the literature; only 4 adult patients have survived for an appreciable time and 2 of these are known to be alive at the present time, ten and three years after nephrectomy. A third such case in a woman aged 35 is reported by Hill. Nephrectomy was performed and the removal of a lipoleiomyoangiosarcoma was followed by high voltage roentgenotherapy to the site of the tumor (3,500 roentgens). Microscopic examination of the specimen did not reveal any squamous cell nests such as have been described in some cases. The essential picture was of fatty, fibrous, muscular and vascular tissue composed of highly primitive cells showing varying and at times little differentiation, apparently originating from the renal blastema. Repeated examinations of the patient at intervals during the past five years have shown no evidence of recurrence, the patient having remained in good health.

Edinburgh Medical Journal

53:273-336 (June) 1946

Surgical Pathology of Peptic Ulcer and Gastric Carcinoma. J. Morley. —p. 273.
Use of Isotopes in Biology. J. H. Gaddum.—p. 284.
*Some Serologic Aspects of Infectious Mononucleosis, with Special Reference to Use of Agglutinin Absorption Tests in Diagnosis. G. Dempster.—p. 296.
Studies on Phagocytosis. J. W. Czedalowski.—p. 311.
Daniel Whistler and His Contribution to Pediatrics. H. P. Tait.—p. 325.

Serologic Aspects of Infectious Mononucleosis.—Dempster has analyzed 170 serums since 1943. The correlation is high between the clinical and the serologic diagnosis of infectious mononucleosis when the absorption test is used (66 per cent). The direct Paul-Bunnell test is of limited value especially in late and relapsed cases. In high titer cases (1:256) the direct test will suffice, but a considerable number of cases may never reach such high titer. Seronegative cases occur, but they form a low proportion of this series (26 per cent). Variations in titer occur during the illness. An application of Barrett's absorption technic to a series of cases in which serum therapy had been administered did not give satisfactory results, for complete absorption of the antibody, by either of the antigens employed, was not demonstrated. There appears to be a nonspecific stimulation of the normal heterophile antibody in acute febrile illnesses. An abridged absorption test may be employed in the routine serologic diagnosis of infectious mononucleosis.

Lancet, London

2:185-220 (Aug. 10) 1946

Epidemiology and Psychosomatic Affections: Study in Social Medicine. J. L. Halliday.—p. 185.
Variation in Female Pelvis. C. Nicholson and H. S. Allen.—p. 192.
Mass Immunization of a Force in the Field Against Diphtheria. J. S. K. Boyd.—p. 195.
Erysipeloid: Survey of 115 Cases. P. F. King.—p. 196.
*Direct Test for Blocking Antibody in Treated Hay Fever. Kate Maunsell.—p. 199.
*Gray Hair in Ill Nourished Children. Lucius Nicholls.—p. 201.

Blocking Antibody in Hay Fever.—Maunsell studied the development of the blocking antibody in specifically and in nonspecifically treated hay fever patients. Instead of injecting mixtures of isoserum and pollen into nonsensitive skin, the skin of the hay fever subjects was tested with mixtures of their own serum and pollen. A "direct" blocking test with autoserum was thus worked out with the object of detecting and titrating the inhibiting substance. Twenty-four allergic subjects who were sensitive to pollen only or to pollen and house dust were divided into two groups according to the treatment they received. In group 1 (11 cases) specific desensitization was carried out. The sensitive subjects received the routine course from 30 to 50 subdermal "pollaccine" injections, ranging from 20 to 100,000 Noon units per cubic centimeter. In group 2 (13 cases) nonspecific desensitization was attempted by the administration of unpooled human isoserum. The subjects received from three to six intravenous injections of from 10 to 30 cc. at intervals of a week. The serum was derived from nonallergic group A donors and given to the allergic recipients irrespective of their blood group. The development of a blocking antibody in the serum of specifically treated hay fever subjects was confirmed by this method. The blocking titer may be used as a guide for assessing clinical protection. No blocking antibody was detected in hay fever subjects treated with nonspecific injections of human isoserum.

Gray Hair in Ill Nourished Children.—Nicholls observed graying of the hair in children in Malaya aged between 5 and 12 years. The children had been in refugee camps. The hair of all the races of the tropics is black or nearly black; hence the diagnosis presents no difficulty, especially as the loss of pigment is seldom distributed evenly throughout the length of the hairs. It may be difficult to diagnose the condition in persons whose hair is fair. Pantothenic acid deficiency in black rats is followed by loss of pigment in the fur. Necropsies on these rats reveal necrosis of the adrenal glands, and the graying appears to be due to a loss of activities between one or more hormones and this vitamin. Some degree of graying of the fur of animals can be produced by other deficiencies than that of pantothenic acid; a deficiency of copper is an example. Most of the children observed by the author had been living largely on manioc root, and the vitamin deficiencies were multiple.

Nordisk Medicin, Gothenburg

30:923-972 (April 26) 1946. **Partial Index**

Carbon Monoxide Period (Generator Gas Period) in Sweden 1939-1945: Clinical and Social-Medical Review. E. B. Salén.—p. 923.
Treatment of Intestinal Disturbances with Yogurt Bacteria in Tablet Form. K. Schroeder.—p. 935.

Hospitalstidende

Carbon Monoxide (Generator Gas) Intoxication in Chauffeurs in Copenhagen in 1944. A. Grut.—p. 937.

Duodecim

Changes in Visual Field in Chronic Carbon Monoxide (Generator Gas) Intoxication. T. Helminen.—p. 945.
Observations Concerning COHb Content of Blood in Workers with Automobiles. L. Noro and N. Saksela.—p. 948.
Otoneurologic Symptoms in Chronic Carbon Monoxide (Generator Gas) Intoxication. U. Siirala and J. Lumio.—p. 951.
*Significance of Tonsillectomy in Convalescents from Diphtheria. E. Vaheri.—p. 951.

Hygiea

*Diagnostic Value of Tipping and Pointing Reaction in Otoneurologic Examination in Cases of Carbon Monoxide Intoxication with Vestibulocorticospinal Disturbances in Function. H. Nyman.—p. 955.
Cardiac Changes in Carbon Monoxide (Generator Gas) Intoxication. S. Almgren.—p. 958.
Eosinophil Granulomatosis. B. Beskow.—p. 965.

Significance of Tonsillectomy in Convalescents from Diphtheria.—Vaheri reports that tonsillectomy was done in 88 diphtheria convalescents from five to eight weeks after the outbreak of the disease to destroy the bacilli. In 52 of the 58 patients with pharyngeal diphtheria and in 21 of the 27 with nasopharyngeal diphtheria the bacilli disappeared within two weeks after the intervention. The results were good also in the 4 carriers operated on and in 2 of the 3 patients with nasal diphtheria. The control material of 600 diphtheria convalescents not operated on shows that the bacilli in diphtheria convalescents disappear more rapidly in cases treated with tonsillectomy. Five or preferably six weeks after the start of the disease is considered the time most suited for the operation.

Vertigo and Carbon Monoxide Intoxication with Vestibulocorticospinal Disturbance.—Nyman concludes that in vertigo of carbon monoxide intoxication the tipping and pointing reactions are not delicate enough to exclude higher vestibular changes of central origin and in part to localize these changes to the brain stem. Pathologic disturbance of the muscular tonus of central origin is regarded as the main cause of the disturbance of balance in cases of vertigo. The central disturbance may be a diffuse injury in the vestibulocorticospinal system, often with dominating functional changes of central origin.

Book Notices

Extensile Exposure Applied to Limb Surgery By Arnold K. Henry, M.B F R C S I Cloth Price $7 Pp 190 with 127 illustrations Baltimore William Wood & Company, 1945

This book on surgical exposure of deep lying structures of the extremities would lose much of its charm and usefulness without the author's preface and introduction In these few pages the purposes of the author are beautifully and forcibly portrayed It is his intent not only to lead the surgeon to the lesion most anatomically but to show the operator how to extend his incisions

The text is graphic throughout and is interspersed generously with the author's comments from well tried experience Detailed directions are given for each approach, and the intensely practical discussions are well correlated with the drawings The body of the text is well outlined and headed and paragraphed, all known methods of exploiting anatomic pathways, especially the cleavage lines and spaces, are described fully and graphically The author's manner is conversational throughout, a feature which makes for easy reading and comprehending His purpose is plainly that of teaching fundamental anatomy as it applies to surgery The figures of speech he uses and his literary style make the book pleasantly readable

The illustrations are admirable because they show the anatomic structures clearly. Wherever a maze of structures superimpose, the artist has illustrated them semidiagrammatically The drawings are clearly leader lined and the captions are large and legible Halftone cuts are used throughout, and the publishers have used paper of such a quality that the original drawings have lost little in reproduction The legends and sublegends are adequately explanatory Boldface type is used in the main legends, and the smaller type of the sublegends makes the drawings very clear. Together they epitomize the operative story

Narcotics and Drug Addiction By Erich Hesse, M D Translated by Frank Gaynor Translated published and distributed by authority of the Alien Property Custodian Cloth Price, $3 75 Pp 219 New York Philosophical Library, Inc 1946

This pseudoscientific treatise, apparently prepared for popular consumption (in Germany), attempts to give an overall view of the pharmacologic agents used by man throughout the world to gain a subjective feeling of well being and help him forget his troubles Material is presented on the chemistry, identification tests, pharmacology, abusive use, history, amounts consumed and effects of addiction The drugs discussed are classified either as 'truly dangerous poisons" or "relatively harmless ones" Among the former—or narcotics proper—are included opium and its derivatives, coca leaves and cocaine, mescaline, Indian hemp and intoxicating pepper. Alcohol, tobacco, the purines and cola are classed as "mere stimulants" The text represents a pitiful attempt to cover an enormous subject No new material is presented Studies reported during the past decade are ignored The discussions are often inadequate, and some errors in fact, translation or printing occur The section dealing with the opiates is particularly inadequate and antiquated The interested lay person would do much better to seek information in the Encyclopedia Britannica

Exercises in Human Physiology (Preparatory to Clinical Work). By Sir Thomas Lewis C B E F R S, M.D Physician in charge of Department of Clinical Research, University College Hospital London Cloth. Price $1 25 Pp 103 with 8 illustrations New York & London Macmillan and Co Ltd 1945

This booklet contains thirty three student laboratory exercises to be performed on human subjects either the medical students themselves or their laboratory partners The apparatus required is simple The directions are clearly given in the well known literary style of the late author The experiments include observations on vascular pulsation, blood pressure measurements, respiratory movements, effects of exercise, venipuncture, venous pressure, x-ray examination of the chest, electrocardiography, vasodilatation and sweating, colorimetry and blood flow, the plethysmograph the capillary microscope, the triple response, reactive hyperemia, effects of ultraviolet light, paralysis of cutaneous nerves, cutaneous sensation, superficial and deep pain, referred pain and peripheral effects of drugs It is stated by the author that this set of experiments is intended for the medical student in the transition stage between preclinical and clinical studies The booklet will be valuable to all who are engaged in teaching medical students and especially valuable to teachers in internal medicine and physiology The medical student will be impressed with the clarity and simplicity of the directions and the explanation of the observations One anglicism annoying to the American reader, is the expression of dosage in milligrams per stone of body weight.

A Standard Practice Manual for Use in State Hospitals for Mental Disorders By Henry Lee Johnson B Sc M D F A P A, Assistant Superintendent Western Oklahoma Hospital Fort Supply Oklahoma Fabrikoid Pp 79 Fort Supply, Oklahoma The Author, 1945

This little volume is divided into two sections The first, of thirty-nine pages, is designed for the physician in a hospital for mental diseases as a guide to the necessary clinical and statistical records and forms The second section is a ward manual for attendants, designed to acquaint them with the practices of the hospital, rules and regulations and instructions for emergencies. The volume is carefully compiled and can be adapted to most state hospitals It is far from being a substitute for training courses for either physicians or attendants but serves a useful purpose as a reference guide, particularly for the latter It should, indeed be required reading for each new ward employee. Dr Johnson has rendered a useful service to mental hospital administration

Dystonia musculorum deformans Por Austregesilo Jr, M D Pp 316 Rio de Janeiro Irmaos Di Giorgio & Cia 1945

After a chapter reviewing the work published from Schwalbe and Ziehen till the present the author discusses cases reports of which have been published and 14 cases of his own. He admits the influence of the hereditary, familial and congenital factors in the idiopathic form and the infectious, toxic and vascular factors in the production of the symptomatic dystonia musculorum deformans. The chapter on symptomatology is long and didactic In this chapter particular attention is merited by the studies of the cerebellar components The author concludes that there are two types of torsion dystonia, idiopathic (Ziehen-Oppenheim's disease) and symptomatic There are clinical and anatomic cases which must be included in the Wilson group Dystonia musculorum deformans is essentially a morbid manifestation of the extrapyramidal system in spite of absence of unequivocal lesions The lesions predominate in the basal ganglions, and the variety of localization in other centers explains the multiplicity of clinical motor manifestations

Synopsis of Obstetrics and Gynecology By Aleck W Bourne, M A, M B B Ch Consulting Obstetric Surgeon Queen Charlotte's Hospital, London Ninth edition Cloth Price $5 Pp 500 with 168 illustrations Baltimore William Wood & Company 1945

The mere fact that this is the ninth edition of this handbook affords proof of its usefulness and popularity The author states that it is not intended as a textbook but rather as a supplement to a textbook and is useful for students preparing for midwifery examinations For the sake of brevity all the material is presented in outline form The few illustrations are small and simply executed This compend is rather comprehensive, covering all of obstetrics including the newborn and gynecology. There is much that one could question but most of the teaching follows accepted opinion on the continent Most educators in this country have frowned on these medical digests prepared primarily to help students pass their examinations They provide little to the medical education of their readers

Regional Analgesia. By H W L Molesworth F R C S Senior Surgeon Royal Victoria Hospital Folkestone England Second edition Cloth Price 8s 6d Pp 92, with 12 illustrations London H K Lewis & Co Ltd, 1946

This edition has been published partly because many copies of the first edition were destroyed during the war A few changes have been included in the book and in general it can be said that it reflects the author's personal experience with regional anesthesia in various parts of the body together with a short chapter on spinal anesthesia and description of technic. In general, it would hardly satisfy the anesthesiologist as we know him today.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

PREVENTION OF CONGENITAL MALFORMATION

To the Editor:—Please discuss preventive treatment for congenital malformations of the developing fetus in utero.

R. S. Averill, M.D., Lynden, Wash.

ANSWER.—According to D. P. Murphy (Congenital Malformations: A Study of Parental Characteristics with Special Reference to the Reproductive Process, Philadelphia, University of Pennsylvania Press, 1940, p. 97) the factors responsible for the production of congenital defects appear to be present in either the sperm or the egg cell prior to the time of fertilization. If this opinion is correct, a certain minimal number of congenitally malformed individuals will continue to be born at a more or less constant rate.

Two factors under human control can influence the birth rate of defective offspring. One of these is parental age, but only after 30 years of age does this factor assume any role in influencing the birth rate of congenitally malformed children. After this age there is a decided increase in the birth rate of defective offspring. For example, after the mother is 40 years of age the birth rate of congenitally malformed children is approximately three times the rate which is observed when the mother is less than 30 years old.

The second factor under human control which can influence the birth rate of malformed children is the previous birth of a malformed child in a family. In the general population a gross malformation, regardless of how slight, occurs with a frequency of about 1:200 live births. In contrast to this frequency, among the offspring of the parents of a malformed child, born subsequent to its birth, another malformed child will be born once in every eight births. In other words the parents of a malformed child are extremely likely to have another defective offspring.

Another factor which may influence congenital malformations is an attack of rubella in the mother during the first trimester of pregnancy. Avoidance of exposure to rubella during this period of pregnancy is therefore desirable.

There appears to be no way known at present to reduce the birth rate of congenitally malformed children except to follow the two suggestions mentioned, namely to limit reproduction to the years before 30 years of age, and for the parents of malformed children to have no more children.

DIZZINESS IN PREGNANCY

To the Editor:—What is the etiology, frequency and treatment of dizziness in normal pregnancy?

Donat R. Richard, M.D., Brooklyn.

ANSWER.—The symptom of dizziness or faintness is common during pregnancy, occurring on one or many occasions in the majority of women. There is no loss of consciousness but a feeling of lightheadedness. It is functional in origin, but a satisfactory explanation for its occurrence has never been given.

It is important to rule out organic disease whenever a patient complains of dizziness. It may be a symptom of anemia, cardiovascular disease, some abnormality of the eyes or ears or a manifestation of central nervous system disease. If there is no evidence of an organic basis for the complaint, simple measures usually suffice. The patient is reassured. She is told to sit quietly for a few minutes when the dizziness occurs. If these simple measures do not suffice, small doses of a barbiturate such as phenobarbital will be helpful.

X-RAY THERAPY FOR ATYPICAL PNEUMONIA

To the Editor:—What is the value of x-ray therapy in the treatment of atypical pneumonia? Would it be advisable to transport a patient by ambulance from home to an office for such treatment?

M.D., Arkansas

ANSWER.—On the evidence so far accumulated, it appears questionable whether x-ray therapy is of any value in the management of atypical primary bronchial pneumonia. Certainly the risk of transporting a sick patient to a hospital or office for x-ray therapy outweighs the possible value of the procedure.

BUTANE EXPLOSION BURN

To the Editor:—A patient received a second degree burn covering approximately 12.5 per cent of the body surface from the ignition of butane gas. Slight shock was present on admission and was treated with plasma. After recovery the patient was anesthetized and the burned area debrided and grossly cleansed. Petrolatum pressure dressings were then applied. Adequate amounts of plasma were given and other fluid balances were maintained. Penicillin also was administered. The urine output was good and there was no evidence of shock. However, the patient became unconscious twenty-four hours after admission, developed a fever of 102 to 105 F. and died sixty hours after admission. No autopsy was obtained. Is there anything peculiar about the physiopathology of butane burns?

M.D., Texas.

ANSWER.—The chemistry of butane or its combustion products does not explain the cause of the unexpected death mentioned in the query. Some special types of butane prepared for combustion purposes contain additives such as ether, but such additives are not known to introduce any factor which would influence the course of burns. Butane, a simple hydrocarbon, unit for unit, contains more British thermal units than its homologues methane and ethane, commoner constituents of combustion gas. For this reason the depth of a burn from butane might exceed that from equal flame exposure to the other gases mentioned. Butane does not possess any peculiar chemical property which may be regarded as significant in the fatal outcome of the case described.

TREATMENT OF STERILITY—TESTICULAR ATROPHY AFTER MUMPS

To the Editor:—Is there any treatment for bilateral testicular atrophy in a man aged 26 who is sterile after six years of marriage and who gives a history of double orchitis from mumps at the age of 10? He is well developed otherwise. Both testes are about the size of those of a 10 year old boy, or possibly a little smaller.

W. E. Anthony, M.D., Ottumwa, Iowa.

ANSWER.—If the patient has an azoospermia, treatment will not improve the condition. Apparently the patient has a testicular atrophy due to a previous orchitis. In such a condition there are extensive degenerative changes in the seminiferous tubules that cannot be altered by any treatment.

POSSIBILITY OF ADDICTION TO PAPAVERINE AND APOMORPHINE

To the Editor:—How long can papaverine hydrochloride in 60 mg. doses and apomorphine hydrochloride in 65 mg. doses be given without fear of addiction?

M.D., South Carolina.

ANSWER.—In Sollmann's Manual of Pharmacology, sixth edition, page 300, Himmelsbach is quoted as stating in 1937 that papaverine is nonaddictant. Apomorphine also does not produce addiction, since neither drug causes euphoria. The Federal Bureau of Narcotics has no record of addiction to either drug. They may therefore be administered without risk.

EFFECTS OF PENICILLIN AND SULFONAMIDES ON VIRUS PNEUMONIA

To the Editor:—Is there any experimental or clinical evidence to warrant the assertion that patients with virus atypical pneumonia are harmed by the administration of penicillin and/or sulfonamides?

M.D., Florida.

ANSWER.—While the evidence is plain that penicillin and/or the sulfonamides do not influence the course of atypical virus pneumonia favorably, there is no evidence that harmful effects have developed from the use of either one of these agents in the treatment of virus pneumonia.

DIAGNOSIS OF NEURODERMATITIS

To the Editor:—There are two signs which are valuable in the diagnosis of neurodermatitis which I do not believe have been reported to date and which are valuable enough in the diagnosis of this disease to bring it to the attention of other physicians. One of the chief characteristics of this type of dermatitis is the extreme itching that occurs. These persons are almost constantly rubbing their skin and irritating it. They often are found scratching at night when half asleep. One often sees them scratching while concentrating on various tasks such as *reading*. These persons seemingly never miss an opportunity to irritate their skin. The two signs based on this phenomenon are: 1. The patient will gently scratch the irritated areas if asked to demonstrate to a physician areas which itch. In other types of dermatitis the patient will point to it. 2. The nails of the patient are smooth and shining as the result of scratching with the flat (dorsal) surface.

H. L. Newbold, Lieutenant M. C., A. U. S.

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A PLEA FOR A MORE CONSERVATIVE ATTITUDE IN RENAL SURGERY

Chairman's Address

ARBOR D. MUNGER, M.D.
Lincoln, Neb.

Just as in theology one has a conception of "original sin," so for the most part clinical observation impresses one that in the surgical treatment of diseases of the kidney the fetish for nephrectomy comes near to being the surgical "original sin." Renal pathology of sufficient moment to necessitate surgical interference presupposes organic or functional disturbance of such degree that the life of the patient or the integrity of the kidney or both are jeopardized. Recovery can be achieved in these cases by operative intervention. It is, however, unfortunate that this relief is obtained most frequently at the expense of extirpation of the kidney. To the urologist must go credit for the more comprehensive understanding of renal physiology, of anatomy and of the genesis of renal pathology—organic and functional. And yet it may safely be said that the surgeon who is doing renal surgery too often fails to make use of this new knowledge when its application favors a more conservative procedure.

The wide variety of lesions which one finds suitable for the newer methods of plastic technics or partial nephrectomy are legion. But, likewise, they challenge the judgment and technical ingenuity of the surgeon. Hydronephrosis is the commonest form of renal disease. Bell[1] has reported, exclusive of hydronephrosis due to renal calculi, an incidence of 3.8 per cent among 32,360 postmortem mechanical obstructions of an organic nature, namely: carcinoma of the prostate, bladder, uterus, ovary and rectum, with prostatic hypertrophy, uterine tumors and pregnancy as responsible agents for this high frequency and with only a small group of the congenital type.

It is toward this group of cases that a more universally conservative attitude is greatly to be desired. As Sargent[2] has aptly stated: "Witness, if you will, the fact that all general surgeons and a very large share of urologists themselves still confine their effort in the management of cases of ureteropelvic obstruction to two procedures—diagnosis and then nephrectomy." Let it not be assumed that nephrectomy is not necessary at times; it goes without saying that it is. But increasingly improved technics, the combination of plastic correction with partial nephrectomy and an understanding of renal physiopathology reduce to a minimum the necessity for nephrectomy.

Let me present some of these principles which serve to argue so well for conservative surgery. In the first place not all hydronephroses need surgical intervention. Pelvic dilatations of a fixed nature which produce no symptoms and in which the renal function remains unimpaired need no immediate operation. Reexamination every six to twelve months should be performed until one is satisfied that the condition is not progressive. The criteria necessary to make a choice between conservative surgical intervention and nephrectomy are, I believe, well delineated. One must consider (1) the functional value of the involved kidney, (2) whether the condition is bilateral or unilateral and (3) the presence and severity of infection. The factor of function in a kidney is of much more value than the size of the pelvic dilatation. If the clinician were to rest on the described pathologic changes which occur as the result of chronically increased intrapelvic pressure, then corrective plastic procedures would have but little place. On the contrary, clinically, it is astounding to see the great functional recovery, both tubular and glomerular, that a hydronephrotic kidney of this type will evidence.

In greatly dilated renal pelves containing a large amount of residual urine the usual functional dye tests are, as a rule, useless in the estimation of excretory integrity. It is here that an excretory urogram is of inestimable service. Early films show only a little puddling in the calices, but definitely increased density develops in the residual urine in one and two-hour films, to establishing the existence of a worthy degree of function.

I am not in sympathy with the oft expressed principle that a hydronephrotic kidney, if operated on at all, should be removed unless it is capable of carrying the total function in the event that the opposite kidney should be removed. Dodson[3] in his most recent book has stated that "Nephrectomy is usually indicated in large unilateral hydronephrosis with diminished renal function and a healthy compensating mate." This is a most depressing theory and lacks a basis in clinical fact, but certainly this statement in the mind of the general surgeon establishes an authoritative basis for nephrectomy.

Nor can a proper evaluation in regard to ultimate functional recovery be established by an indwelling ureteral catheter. Drainage established by a well instituted pyeloplasty will be the ultimate criterion to functional recovery. Rather than continue in a retarded state the reestablished kidney will extend itself to recover reasonable function.

Read before the Section on Urology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

[1] Bell, E. T.: Renal Diseases, Philadelphia, Lea & Febiger, 1945.

[2] Sargent, J. C.: J. Urol. 47: 323, 1942.

[3] Dodson, A. I.: Urological Surgery, St. Louis, C. V. Mosby Company, 1945.

Case 1.—Mrs. C., a woman aged 26, the wife of a soldier, came into my office with a decidedly generalized edema; the level of blood urea nitrogen was 127 mg. per hundred cubic centimeters; the blood pressure was 182 systolic and 80 diastolic. She was persistently nauseated, had violent headaches and progressive oliguria and was seven months pregnant. A history obtained from the husband and the patient revealed that a diagnosis of infected bilateral hydronephrosis with right renal calculus had been made one year previous in an army hospital. On the third attempt at corrective surgical intervention to the left kidney, ostensibly her better kidney, a nephrectomy had been performed in this army hospital. The infected right hydronephrosis with calculus was not corrected. As her pregnancy progressed the local and systemic manifestations from the pathologic condition in the residual kidney deepened until she appeared at my office with the symptoms detailed herein. She was immediately hospitalized, and a rapid pyelostomy was performed without attempting to remove the large calculus impacted in the ureteropelvic juncture. With the institution of proper intrarenal drainage and acceptable rehabilitative measures, this long standing, badly damaged and infected hydronephrosis made a remarkable functional recovery, and the patient assumed a normal clinical status except for a nonviable fetus which the consulting obstetrician relieved by cesarean section without incident to the patient. Several weeks later the right kidney was reapproached for corrective surgical intervention. The calculus was removed; part of the thickened redundant renal pelvis was resected away, and a sharply angulated, minutely calibered rigid stricture at the ureteropelvic juncture was split longitudinally and inlaid with a size 14 F gallbladder T tube, one end into the kidney pelvis and the other into the ureter. No attempt was made to cover the T tube in the strictured area, only tacking sutures to stabilize the tube in place. The kidney pelvis wound closed, and further pelvic or nephrostomy drainage was not instituted. On the twenty-eighth day the gallbladder T tube was removed and no leakage whatsoever occurred from the drainage tract. For the past four months this newly reformed ureteral area is being regularly calibrated with no. 9 bulbs and zealous apprehension. The patient maintains an infected urine of varying degree, a minimal residual urine, a blood urea nitrogen level within normal range, a satisfactory kidney function and absent local hydronephrotic symptoms. Clearly this kidney has emerged from a precarious chronic pathologic existence and is extending itself to carry on a normal physiologic career.

Congenital obstructive anomalies of the upper portion of the urinary tract tend to be bilateral. True it is, in most instances, that predominating symptoms and urologic observations present themselves in one kidney and the physician is prone to assume the obvious. However, a more minutely critical survey will reveal a bilaterality not indicated by the clinical symptoms. Thus, the removal of the manifestly hydronephrotic kidney in this circumstance throws an irreparable burden on the remaining member. There is an old saying that nephrectomy in the thirties for hydronephrosis leads to a hydronephrosis in the forties on the opposite side. To consider how this comes about, the manifestly hydronephrotic kidney, for example, may maintain a daily urinary output of 1,000 cc., whereas the ostensibly normal kidney maintains a daily excretion of 1,500 cc. Remove the damaged kidney, and the undamaged kidney, in order to maintain proper physiologic balance, attempts to assume the work of its removed mate and to excrete 2,500 cc. a day. Under this extra volume, an abnormal intrapelvic pressure builds up and starts pelvic expansion. However slight and unembarrassing is the obstructive process heretofore existing, it now becomes a matter of grave pathologic importance. A static urine of duration is invariably an infected urine. And it is safe to assume that all hydronephroses are infected lesions. The infection on urologic survey may not be palpably evident; however, once plastic surgery is undertaken active infection usually manifests itself. A careful cultural study is of the utmost importance. What with the proper application of the newer chemotherapeutic and antibiotic agents to augment the selected technical procedure along with the most essential principle of adequate and sufficiently prolonged drainage and of splinting where it is indicated, successful end results may be expected.

In only an occasional case will one be rewarded by disappearance of the infection. The restoration of adequate drainage, however, does lessen the residual urine and decrease the persistence of the invading organism. Slight residual pyuria or other sequelae are less disastrous than the destruction of function. I do not propose any individual successful pyeloplastic operation. The wide variety of plastic procedures applicable to this condition suggests that no single pattern holds advantage over another except as it may be especially applicable to the correction of the condition at hand.

The procedure of choice depends on the cause of the obstruction, which can be definitely determined only at operation. The ureteropelvic outlet may be distorted by extensive adhesions, fibrous or vascular bands and anomalous vessels. The juncture may be blocked by stricture, cysts, hypertrophied muscle or valve formation because of high insertion of the ureter. The plastic procedure that will correct the particular condition discovered should be chosen.

Except in far advanced cases, hydronephrosis due to obstruction at the ureteropelvic junction may be corrected by pyeloplasty, but the decision between pyeloplasty and nephrectomy is sometimes difficult to make unless severe infection is present or the pyelogram and appearance of the kidney at operation indicate the need for nephrectomy. If the obstructive lesion is extrinsic, pyeloureterolysis usually eradicates the obstruction. The presence and extent of intrinsic block is determined by probing the junction through a small incision, with a hemostat or a no. 12 or 14 F bougie. The caliber of the lumen should be measured and the degree of angulation noted. When stricture is encountered, the jaws of the hemostat are gradually spread to open the lumen while an incision is made to split the stricture throughout its length. The gap is bridged with a no. 12 or 14 ordinary gallbladder T tube left in place for three weeks. Epithelization around the tube ends will have occurred to form a new ureter.

When a hypertrophied muscle is encountered a row of parallel incisions are made down to the mucosa. Splinting and intubation are done through an incision below the hypertrophied muscle area with a no. 14 F tube to maintain the caliber of the lumen until healing is complete.

Obstruction from valve formation due to high insertion of the ureter into the pelvis is corrected by a suitable pyeloplastic operation, and the cut edges of the pelvis may be excised. An excessively redundant pelvis may be resected, and the ureter joined to the lowest part of the remaining pouch. Ureteral implantations or lateral anastomoses may also be utilized.

Anomalous veins may be sacrificed, but arteries should be treated with circumspection. The aberrant blood vessels to the lower pole of the kidneys are saved by a pyeloplasty by which the anterior and posterior walls of the pelvis are partially excised in such a way that, when sewed together, the ureter is in correct alinement. Nephropexy is performed as indicated.

Occasionally a renal sympathectomy is desirable to assure relief of pain.

Ureteral splinting and intubation, the most important single factor in the success of pyeloplasty, should be performed around the pelvis or ureter by any of the various methods suitable to the particular case. Splinting and intubation should be maintained for at least ten days to three weeks, or longer if necessary. The best adjunct to use for combined draining and splinting purposes is the ordinary gallbladder T tube.

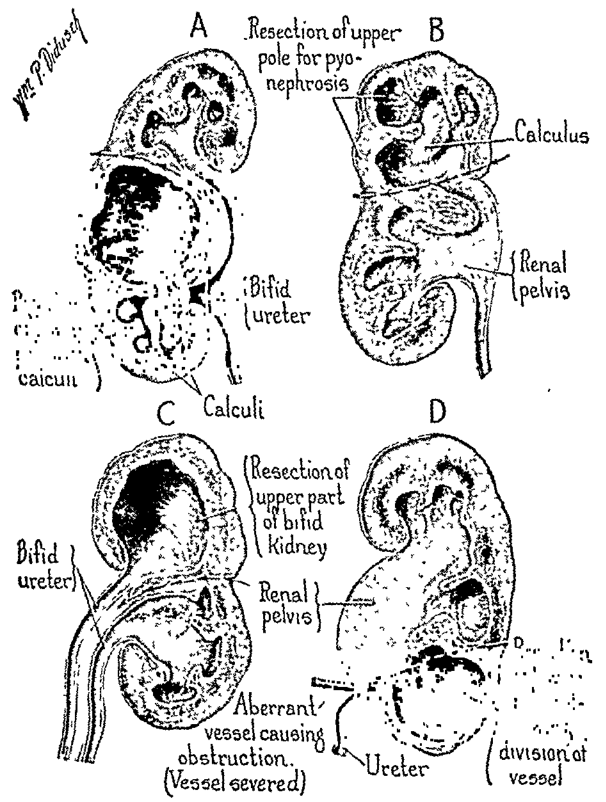
Wm. P. Didusch
A
Resection of upper pole for pyonephrosis
B
Calculus
Renal pelvis
Bifid ureter
calculi
Calculi
C
D
Resection of upper part of bifid kidney
Bifid ureter
Renal pelvis
Aberrant vessel causing obstruction. (Vessel severed)
Ureter
division of vessel

Fig. 1.—Partial nephrectomy for *A* (case 2), calculous pyonephrosis; *B* and *C*, lithiasis, and *D*, abnormal blood vessels with resultant pyelorenal ectasis.

Lesions of the kidney, which so frequently eventuate in nephrectomy, are in a surprising number of instances small lesions localized to a definite area of the organ with the rest of the parenchyma perfectly sound and the pyeloureteral excretory system corresponding to the same area perfectly intact. Nephrectomy frequently entails excessive mutilation and certainly often sacrifices the much needed healthy parenchyma surrounding a single and restricted lesion. In view of the vital importance of renal function, a more conservative method is essential. Partial nephrectomy has been in use since 1887 when Czerny first employed the method eighteen years after Simon had performed the first total nephrectomy. At that time an exact exploratory technic was not available. At present it is possible by urographic and other functional examination to determine more or less accurately the portion of the kidney which is affected, the cause of the lesion and the condition of the remainder of the organ, especially of the pyeloureteral excretory passage; therefore, conservative intervention can be carried out if the location of the lesion permits. Prior to surgical intervention, translumbar aortography (according to the technic of Reynaldo dos Santos[4]) may afford an exact knowledge of the morphology of the renal blood vessels, the condition of the portion to be saved and the location of the lesion to be resected. This is especially important if only one kidney remains or the contralateral kidney is diseased.

Indispensable prerequisites to partial nephrectomy are a normal blood supply to the portion of the organ which is to be saved and the absence of obstruction, assuring permeability of the excretory passages of this residual portion. The anatomic integrity of this portion must be previously ascertained and then verified at operation by manual examination and, if necessary, by direct roentgenography. Unless these conditions are satisfactory the resection should not be undertaken except in emergencies.

A study of extirpated kidneys with small, circumscribed lesions indicates that in many cases it is possible to remove the damaged portion without interfering with the function of the healthy residual portion. Conservation of one quarter of the total renal mass, or one half of one kidney, is sufficient and compatible with life.

Case 2.—Mr. C. S., a man aged 48, physically well set up, had a left nephroureterectomy for renal tuberculosis in 1939. At the time of his nephrectomy he had a known moderate nonspecific infection in the upper part of the urinary tract on the right side. Likewise, there was a bifid kidney on the same side. Under increased functional stress during the following year there developed multiple calculi with increasing pyelectasis in the lower pelvis of the residual kidney. Progressively severe local and systemic symptoms made it necessary to interfere surgically. On inspection, the upper half of the kidney, the ureter and blood supply appeared normal. The lower half of the kidney was soft, distended and bluish—definitely a case of calculous pyonephrosis. This pyonephrotic lower half with its ureter to the bifurcation was amputated through a rather bloodless suggestion of a septum. This residual portion of the right kidney has been sufficient to enable the patient to live normally for nearly six years with manifestly fewer signs of renal insufficiency than existed before the partial nephrectomy (fig. 1 *A*).

As a rule, it is possible only at operation to determine whether or not partial resection is possible, although pyelography is also of great value. Partial nephrectomy is indicated in all cases in which the lesion affects less than one half of the organ; in exceptional cases smaller portions may be saved. The method is especially indicated in partial or localized hydronephrosis affecting the parenchyma of one or two calices or one polar extremity of the organ. If the operation is supplemented by proper pyeloureteral correction to assure subsequent drainage of the residual portion, the results are certain. In lithiasis affecting a large zone, in which simple extraction of the calculus is not sufficient, partial nephrectomy will permit conservation of the remainder of the parenchyma and prevent progress of the lesion due to contact of the healthy tissue with the inflammatory process (fig. 1 *B*, *C*; fig. 2). In renal cysts partial nephrectomy is indicated if the cysts are restricted to one

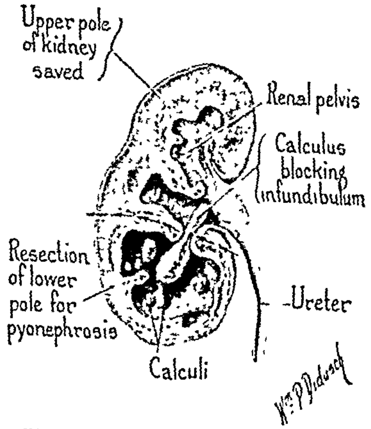
Upper pole of kidney saved
Renal pelvis
Calculus blocking infundibulum
Resection of lower pole for pyonephrosis
Ureter
Calculi
Wm. P. Didusch

Fig. 2.—Partial nephrectomy in case of lithiasis.

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4. dos Santos, R.: Med. contemp. 47:93, 1929.

zone; this is frequently the case with large solitary cysts. Partial resection is indicated in some cases of hydatid cyst, provided the cyst can be removed with the affected portion and communication does not exist between the cyst and the calices or renal pelvis (fig. 3 *B*).

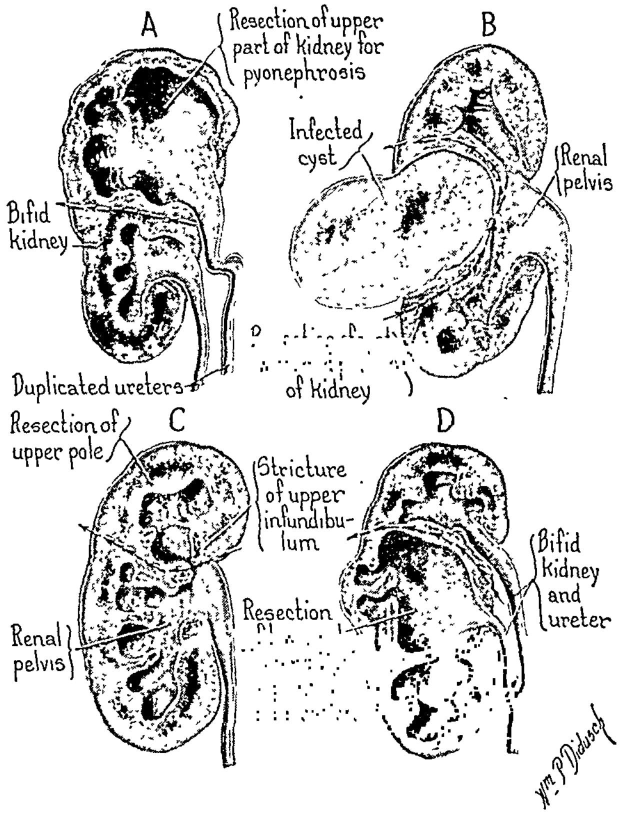

Fig. 3.—Partial resection in cases of localized destructive renal infection (*A*, *C* and *D*) and hydatid cyst (*B*).

Partial resection is indicated when it is necessary to remove abnormal blood vessels which alter or impede pyeloureteral evacuation, with resultant permanent or temporary pyelorenal ectasis. If the renal area supplied by this vessel is greatly changed (atrophic, infected) the superimposition of circulatory disturbances inherent in the ischemia produced by section of the vessel may easily lead to septic necrobiosis of that zone, and the septic process may extend to other renal areas. In these cases it is advisable to extirpate the portion affected by the ischemia in order to avoid this danger and save the remainder of the organ. In certain plastic pyeloureteral interventions it may be necessary to extirpate a portion of the kidney (fig. 1 *D*).

In destructive renal infection localized in one restricted portion of the organ, extirpation of this zone and direct drainage through the surface may save a considerable portion of the kidney. This has been found effective in abscesses of the renal cortex, renal infarction, localized pyonephrosis and perirenal abscesses invading the organ by contiguity (fig. 3 *A*, *C* and *D*).

It is conceivable that partial nephrectomy may be employed in renal tuberculosis, especially if there is coincident complete pyeloureteral duplication, permitting functional and roentgenographic examination of each excretory system independently. If careful functional tests (and especially retrograde pyelography) indicate that one portion of the duplicated kidney is completely intact and if at operation the vascular condition and the degree of extension of the infection will permit it, extirpation of the tuberculous duplication would be indicated.

In pyelic and pyeloureteral anomalies with infection involving only one portion of the kidney, and in which the remaining excretory system is adequate for the accumulation of the urine secreted by the healthy kidney, partial nephrectomy is indicated (fig. 4). Authorities are not in accord as to the value of partial nephrectomy in renal neoplasm. Favorable results have been reported in benign and restricted cases. Czerny performed the operation in a case of angiosarcoma of the kidney. Renal fracture offers a most satisfying field for the exercise of conservative judgment. Almost irrespective of how badly shattered is the renal parenchyma with an intact renal pedicle, and even though it is of a number of days' duration, with a large retroperitoneal accumulation of blood and urine, infected or not, after the gathering together of the fragments in some semblance of a mass, protected by gauze pack and wide open drainage, the kidney will astoundingly recover and will reestablish a satisfactory pyeloureteral excretory system.

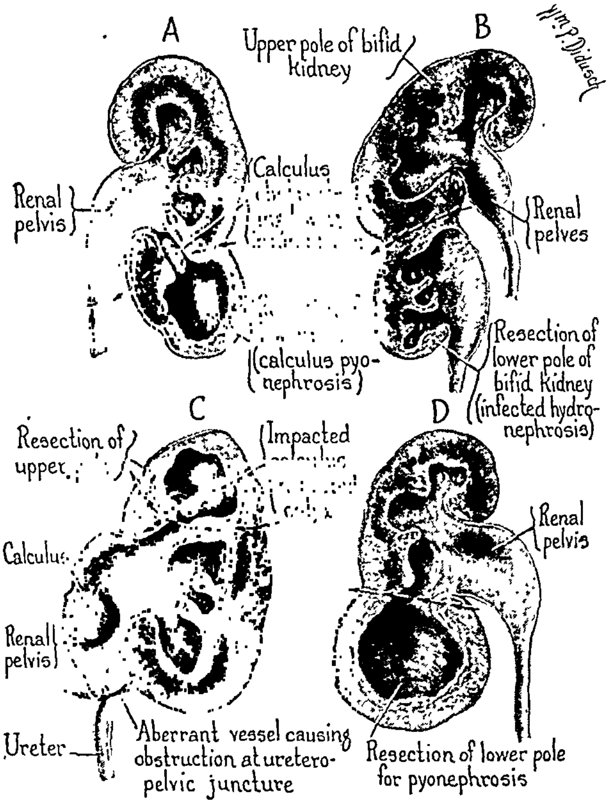
A
Upper pole of bifid kidney
B
Wm. P. Didusch
Calculus
Renal pelvis
Renal pelves
(calculus pyonephrosis)
Resection of lower pole of bifid kidney (infected hydronephrosis)
C
D
Resection of upper
Impacted
Calculus
Renal pelvis
Renal pelvis
Ureter
Aberrant vessel causing obstruction at ureteropelvic juncture
Resection of lower pole for pyonephrosis

Fig. 4.—Partial nephrectomy in pyelic and pyeloureteral anomalies.

In all cases the surgical indications depend on the anatomic condition of the organ and the lesion and on the condition of the contralateral kidney. I consider that it is preferable to risk failure of conservative treatment, necessitating intervention, rather than to remove a kidney which might have been saved in whole or in part. One disadvantage of the partial resection which has prevented more extensive adoption of the method is hemorrhage of the sectioned surface, together with the difficulty of obtaining hemostasis. Systematic use of the electric bistoury for section of the renal parenchyma reduces the severity of this immediate complication. Another disadvantage, hitherto, has been the difficulty of determining the exact zone affected by the lesion. However, modern exploratory and roentgenographic methods render localization of the lesion and confirmation of the integrity of the remaining renal area possible prior to or during operation.

Two fundamental technical details must be observed in partial nephrectomy: (1) previous ligation of the prehilar vascular system of the portion to be extirpated and (2) suture of the bleeding surface of the kidney, supplemented by the application of a muscle tissue graft, thrombin topical and desiccated fibrin film over the bleeding area to afford better hemostasis. The graft may be obtained from the margin of the lumbar operative incision. The muscle tissue reinforces the sutures in the friable tissue of the renal parenchyma. The institution of drainage is decidedly important and may determine the success of the intervention. If the excretory passages, renal pelvis or calices have been opened and are closed by suture, intrarenal drainage is essential and should be continued for from fifteen to twenty days until perfect coaptation of the pyelorenal suture is assured. Drainage removes the danger of urinary fistula, which might interfere with the ultimate conservative results. Perirenal drainage near the bleeding surface should never be omitted. It should be maintained for at least eight days to prevent the retention of any suppurative material. Lack of communication with the external surface favors abscess formation, with possible extension of the infection to the other parts of the kidney.

SUMMARY

1. There are too many nephrectomies.
2. The surgical correction of hydronephrosis is for the most part a perfectly logical and feasible operation.
3. Hydronephrosis is commonly a bilateral disease.
4. Protective splinting with adequate and prolonged intrapelvic drainage is an absolutely necessary procedure in plastic correction of the renal pelvis.
5. About 70 per cent of diseases requiring surgical intervention and of congenital malformation of the kidney are amenable to partial nephrectomy.
6. Total nephrectomy in hydronephrosis should be instituted only when it can be demonstrated that the drainage system is completely destroyed beyond recovery and in renal disease wherein it can be shown that the kidney is utterly worthless.

1015 Sharp Building.

Birthday of Atomic Energy.—Major Gen. L. R. Groves, commanding general of the Manhattan project, said that the significant anniversary which should be observed in connection with the United States program of development of atomic energy is December 2. It was Dec. 2, 1942 when the first successful nuclear reactor was made to work. It was built under the West Stands of Stagg Field at Chicago by a group of scientists working under Arthur H. Compton at the Manhattan project's metallurgical laboratory. That was the day on which man first demonstrated that not only could he release the energy of the atom but he could control it. A special meeting of representatives of the Argonne National Laboratory and its twenty-five participating universities will be held in Chicago on December 2, the fourth anniversary of the first self-sustaining pile.

NEUROLOGIC COMPLICATIONS OF SPINAL ANESTHESIA

MORRIS J. NICHOLSON, M.D.
and
URBAN H. EVERSOLE, M.D.
Boston

Neurologic complications, although infrequent, may follow spinal or general anesthesia. There are reports in the literature of cranial nerve palsies,[1] hemiplegia[2] and peripheral neuropathies[2a] following general as well as spinal anesthesia. Certain neurologic complications are prone to follow spinal anesthesia while others are more frequent after general anesthesia. Woltman found that convulsions, extrapyramidal rigidity and postoperative psychosis followed general anesthesia almost exclusively.[2a] Courville has shown that the anoxic hypoxia associated with the administration of such weak anesthetic agents as nitrous oxide and ethylene can cause degenerative changes in the cerebral cortex and lenticular nucleus.[3] On the other hand, headache,[2] septic[4] and aseptic meningitis,[5] arachnoiditis,[6] neuritis,[7] myelitis[8] and the cauda equina syndrome[9] have been the complications most frequently reported following spinal anesthesia. It is on these complications, particularly the cauda equina syndrome, that our attention will be centered.

These cauda equina complications are generally brought to the anesthesiologist's attention because the patient fails to regain the use of his lower extremities at the usual time following spinal anesthesia. On examination, loss of motor and sensory function is generally found to involve the lumbosacral nerve distribution. Associated observations are urinary retention and incontinence of feces with the loss of anal sphincter tone. This loss of bowel and bladder function is the most ominous part of the entire clinical picture, and the return of function, when it occurs, is extremely

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From the Department of Anesthesiology, the Lahey Clinic.

Read before the joint meeting of the Section on Orthopedic Surgery and the Section on Anesthesiology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 5, 1946.

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[9] (*a*) Peirson, E. L., and Twomey, C. F.: Neurogenic Dysfunction of the Bladder Due to Spinal Anesthesia, New England J. Med. **223:** 171-174, 1940. Rieser, C.: Spinal Anesthesia and Injury to the Nervous Mechanism of Micturition, J. A. M. A. **117:** 98-100 (July 12) 1941. (*b*) Ferguson, F. R., and Watkins, K. H.: Paralysis of the Bladder and Associated Neurological Sequelae of Spinal Anaesthesia (Cauda Equina Syndrome), Brit. J. Surg. **25:** 735-752, 1938. (*c*) Critchley, M., and others: Discussion on the Neurological Sequelae of Spinal Anaesthesia, Proc. Roy. Soc. Med. **30:** 1007-1032 (June) 1937.

slow. Impairment of sensation seems to be exceedingly variable. This loss of sensation may involve only the saddle area, one or both legs or the entire body below the umbilicus. Ferguson and Watkins[9b] felt that it was clear from the examination of all their patients that the basic lesion was the same (cauda equina) but the variations were due to different degrees of affection of this area.

ETIOLOGY

The exact cause of each of the neurologic complications that have been reported following spinal anesthesia in man is difficult to determine. Several investigators have shown that certain spinal anesthetic drugs cause a specific toxic destructive effect on nerve tissue when they are injected intrathecally in the dog or cat. Davis and his associates,[10] after injecting dibucaine (Nupercaine hydrochloride), a solution of procaine, amyloprolamine, alcohol and strychnine sulfate (Spinocain), a solution of procaine 40 per cent containing a small amount of strychnine (Gravocain) and procaine hydrochloride (Scurocaine) intrathecally in dogs, observed the following changes: (1) a varying degree of inflammatory reaction in the leptomeninges; (2) passive changes in the ganglion cells of the gray matter of the cord similar to those seen in retrograde or so-called wallerian degeneration; (3) swelling and fragmentation of axis cylinders, and (4) signs of degenerative changes in the fiber tracts of the cord. Lundy[11] was able to show degenerative changes in the nervous structure in dogs when they were exposed to 20 per cent concentrations of procaine hydrochloride but was unable to show the same degenerative phenomena when the concentration was less than 17.5 per cent. MacDonald and Watkins,[12] in an attempt to explain the damage to the cauda equina caused by heavy Durocaine[13] in human beings as reported by Ferguson and Watkins,[9b] used cats for their experiments. First, they administered the gliadin, glycerin and alcohol which had been added to the procaine hydrochloride to make the Durocaine to find out what effect these drugs would have on the cauda equina of cats. They were unable to produce paralyses in cats by the intrathecal injection of 15 per cent alcohol with 20 per cent glycerin. In using solutions of the same concentration as that employed in man but of greater relative bulk, however, they were able to reproduce the lesions of the cauda equina with heavy Durocaine in a considerable proportion of the cats. They could also produce such lesions by injection of procaine hydrochloride itself in the same concentration, 10 per cent, as that employed in man. Furthermore, the incidence of these lesions in cats was greatly increased by employing a stronger concentration of the drug. There seems to be little doubt, therefore, that the toxicity lies within the spinal anesthetic agent itself when the cat or dog is the subject.

The clinical manifestations of the lesion of the cauda equina might be explained by damage to the lumbosacral region of the cord, to the conus medullaris or to the nerves of the cauda equina, but it seems more probable that the maximal damage is to the latter. It seems rather evident that the lesion produced is the direct result of the administration of a spinal anesthetic agent, since in most cases it has occurred immediately following the operative procedure. A discussion of several possible ways in which such damage might occur follows.

Direct Trauma.—Direct trauma as the sole cause of the anesthetic complication can fairly well be eliminated because of the tens of thousands of diagnostic lumbar punctures, some of them with much trauma, that have been performed without any similar complication. But there does seem to be a definite relationship between the traumatic spinal puncture, which causes pain to radiate down the leg and which is combined with the injection of a spinal anesthetic drug, and a permanent neurologic complication.

Inflammatory Reaction.—The rapid onset of most of these complications seems to preclude infection as the etiologic factor. Furthermore, no organisms have ever been cultured from the spinal fluid of a patient with this type of lesion, and the dominating cells are generally lymphocytes rather than polymorphonuclear leukocytes. Seldom are there complications associated with an elevation in temperature or other signs and symptoms of an inflammatory process involving the protective coverings of the spinal cord. On exploration of the spinal cord the day after the administration of the spinal anesthetic in case 1, there was slight, if any, evidence of inflammation.

Toxicity of the Drug.—In considering whether these lesions of the cauda equina in man are due to the toxicity of the agent itself, as has been shown to be the case in the dog and cat, it should be noted that not all the nerves influenced by the anesthetic agent are affected by the paralysis. The truth of this observation is clearly illustrated in the reports of cases in which the anesthesia would suffice for an upper abdominal operation and yet the ultimate paralysis would be limited to the lumbosacral or sacral nerves. It seems that only those nerves exposed to the greatest concentration of the drug are affected. Permanent paralysis, then, seems to be greatest in the nerve tissues (nerve roots, conus medullaris and sacral region of the cord) which meet the drug in its full concentration soon after it has left the tip of the spinal puncture needle. The lesion is, therefore, maximal in those roots of the cauda equina into the immediate vicinity of which the drug is injected. The evidence of the experiments on animals leads to the conclusion that this is not in the nature of an idiosyncrasy, as postulated by Brock, Bell and Davison,[8] but that in the concentrations employed most spinal anesthetic drugs have a toxicity little short of that which would produce paralysis in a higher percentage of patients. The cystometric studies of Bellis[14] also showed what a profound effect spinal anesthesia and general anesthesia have on this part of the cord.

Neurologic Disease Precipitated by Spinal Anesthesia.—Another consideration in the etiology of these complications is the possibility of spinal anesthesia acting as a precipitating factor in the evolution of certain preexisting neurologic affections. Hammes[15] reported 8 cases in which neurologic complications were associated with spinal anesthesia; 5 involved the following preexisting organic neurologic disorders: pernicious anemia with combined sclerosis, multiple sclerosis, tabes, general paresis and toxic psychosis. Additional evidence that this supposition may be true is gained from cases 2 and 3 in which the patients received spinal anesthesia for the removal of carcinoma of other parts of the body, only to have the anesthesia fail to wear off. Subsequent investigation revealed that the carcinoma had already metastasized and was producing an almost complete blockage of the circulation of the cerebrospinal fluid. That the routine diagnosis of such impending blockage of the cerebrospinal fluid is difficult has been pointed out by Poppen and Hurxthal[16] in their attempt to explain why some patients with known tumors of the spinal cord have normal spinal fluid dynamics. They feel that in spite of the presence of pathologic change, the spinal fluid dynamics will be normal until the opening in the subarachnoid space becomes smaller than the opening in the spinal puncture needle used in the determination.

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[14] Bellis, C. B.: Cystometry, After Spinal Anesthesia, Surgery **16:** 896-905, 1944.

INCIDENCE

It is almost impossible to determine from the literature the true incidence of neurologic complications following spinal anesthesia, since the reports show a great variation. Early in his experience with spinal anesthesia Babcock[17] reported several abducens palsies, but subsequent to this early experience he reported the administration of 15,000 Stovaine (the hydrochloride of benzoyl dimethylaminoethyl-propanol) spinal anesthetics without neurologic complications. Livingstone and her co-workers[5] gave the incidence of aseptic meningitis as 1 in 2,000, while Hyslop[18] found an incidence of 0.5 per cent of sequelae in the central nervous system after spinal anesthesia. Falk[19] reported a 6 per cent incidence of headache with associated stiff neck. Jarman[20] gave the incidence of paralysis as 1 in 1,000, while Emmett[21] after 1,415 and Foss and Schwalm[22] after 3,000 spinal anesthetics observed no neurologic complications. Ferguson and Watkins[9b] reported 14 cauda equina syndromes following the use of heavy Durocaine in 1,000 cases at the Manchester Infirmary in England over a two and a half year period. During the same period there were 1,000 patients who received Stovaine spinal anesthesia, 300 dibucaine, 860 light Durocaine and 650 whose spinal anesthetic agent was not listed. This makes a 1 to 271 incidence of permanent neurologic complications for the entire group, but since all the complications were with heavy Durocaine, the incidence for this drug is 1 to 71.

In a report on 1,381 patients who received Metycaine hydrochloride spinal anesthesia at the Lahey Clinic, Woodbridge[2b] found 4 patients who suffered a transient foot drop. Although the anesthetic was the most likely etiologic factor, trauma from tight bed clothes may have been a contributing factor in these cases. Fortunately, all 4 of these lesions cleared up completely in six months.

According to Woltman,[23] the ulnar and peroneal nerves are the most frequent sites of peripheral nerve paralyses. He was of the opinion that senility, arterioscleroses, infectious neuritis and trauma must be considered as important factors in the etiology of these neuropathies. Trauma may result from faulty position on the operating table or from the patient's crossing his legs. The latter is especially important when there has been decided loss of weight from a prolonged illness or a serious operation.

There have been 21,000 patients at the Lahey Clinic who have received tetracaine (Pontocaine) hydrochloride for spinal anesthesia since 1934. Five neurologic complications have resulted. In 3 of these patients there developed lesions of the cauda equina type; 2 of the patients were later found to have a cerebrospinal fluid block from metastatic carcinoma. Two developed a peroneal neuropathy which was manifested by foot drop. In addition, 2 patients in whom there developed postspinal neurologic disturbances and who were suspected of having permanent sequelae were found on further investigation and operation to have been suffering from tumors of the spinal cord.

REPORT OF CASES

The following reports of cases in which neurologic complications developed after spinal anesthesia have been obtained from the records of the Departments of Anesthesiology and Neurosurgery of the Lahey Clinic and from the records of certain other anesthesiologists and surgeons outside the Lahey Clinic who have a particular interest in this problem.

Cauda Equina Syndrome

CASE 1.—A white man aged 42, a bartender, was seen Nov. 9, 1943 with the complaint of cold legs of two years' duration and cramps in the calf muscles of six months' duration. A diagnosis of thromboangiitis obliterans was made, and hospitalization for further investigation and a possible lumbar sympathectomy was advocated. On Feb. 26, 1944 he was given 14 mg. of tetracaine (Pontocaine "Niphanoid") hydrochloride and 2.6 cc. of 10 per cent dextrose for skin temperature readings; spinal puncture was made in the third lumbar interspace. Anesthesia developed to the eighth thoracic segment. After twenty hours the anesthesia was still present, and the patient was paralyzed from his waist down. A spinal puncture at that time showed an initial pressure of 50 mm. of water, total protein 347 mg. and sugar 21 mg. per hundred cubic centimeters and lymphocytes 57. Approximately thirty hours after the spinal anesthetic was administered, an exploration of the lower thoracic and upper lumbar cord under endotracheal ether anesthesia for what was thought to be a spinal fluid block was performed. No block was found; the cord showed only slightly increased vascularity and injection. The patient remained in the hospital three months and showed but little improvement. There was some improvement in sensation over the area supplied by the second lumbar nerve and a slight return of motor power in the feet. Although he voided voluntarily, there was a persistent small amount of residual urine with an associated pyuria present throughout his hospital stay. He was discharged from the hospital without ever having regained the use of his lower extremities. During his stay at home over the next fourteen months there was no improvement in his condition. He died eighteen months later, and a complete necropsy, including the brain and spinal cord, was obtained. The pertinent pathologic observations were in the spinal cord.

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[15] Hammes, E. M.: Neurological Complications Associated with Spinal Anesthesia (Eight Cases), Minnesota Med. **26:** 339-345, 1943.

[16] Poppen, J. L., and Hurxthal, L. M.: Normal Cerebrospinal Fluid Dynamics in Spinal Cord Tumor Suspects, J. A. M. A. **103:** 391-393 (Aug. 11) 1934.

[17] Babcock, W. W., in Piersol, G. M.: Cyclopedia of Medicine, Philadelphia, F. A. Davis Company, 1931, vol. 1, pp. 519-549.

[18] Hyslop, G. A.: Spinal Anaesthesia, Nervous System Sequelae: A Case in Point, Surg., Gynec. & Obst. **57:** 799-802, 1933.

[19] Falk, H. C.: Deaths from Spinal Anesthesia, Am. J. Surg. **11:** 461-464, 1931.

[20] Jarman, R.: Recent Advances in Anaesthetics, Brit. M. J. **1:** 796-799, 1934.

[21] Emmett, J. M.: Fourteen Hundred and Fifteen Spinal Anesthesias with Special Reference to Indications, Complications and Mortality, with Cases Reported and Charts, Virginia M. Monthly **62:** 304-309, 1935.

[22] Foss, H. L., and Schwalm, F. L.: Relative Merits of Spinal and Ether Anesthesia, J. A. M. A. **101:** 1711-1716 (Nov. 25) 1933.

[23] Woltman, H. W.: Crossing the Legs as a Factor in the Production of Peroneal Palsy, J. A. M. A. **93:** 670-672 (Aug. 31) 1929.

The following is a comment by the neuropathologist: "The principal pathologic observation is the loss of nerve fibers in the roots of the cauda equina and the regeneration of fine nerve fibers in the anterior roots. The degeneration of posterior columns of the spinal cord is unquestionably secondary to destruction of posterior roots. The fibrous thickening and cellular proliferation in the meninges may be viewed as the final stage of an inflammatory process whether induced by chemical irritation or infection. The pathologic observations are approximately the type one would expect in a lesion one to two years of age. The partial sparing of some roots and the regeneration in others would account for the retention of some bladder function and sensation. There are no vascular lesions suggestive of thromboangiitis obliterans. I believe that the changes in the anterior roots which were interpreted as neurofibromatosis are regenerative phenomena. The observations are consistent with, although not pathognomonic of, the cauda equina syndrome of spinal anesthesia."

Case 2.—A white woman aged 49 had had two previous spinal anesthetics, the first on Jan. 31, 1945 for a diagnostic curettage, at which time she was given 7 mg. of tetracaine hydrochloride with dextrose. The next day she was given, by the continuous method, 12 mg. of the drug with dextrose for the excision of a right ovarian cyst which showed papillary adenocarcinoma.

Three months later the patient underwent another operation, this time at the Lahey Clinic, and tetracaine hydrochloride-dextrose spinal anesthesia by the continuous method was used. The height of anesthesia was never satisfactory, although 38 mg. of the drug was eventually injected. The level of anesthesia never went above the eleventh thoracic segment, and it had to be supplemented by the administration of cyclopropane plus curare intravenously so that a hysterectomy and appendectomy could be accomplished. The pathologic sections showed uterine carcinoma of an undifferentiated type. Seven hours after the operation the patient was still unable to move her legs. A lumbar puncture was performed which revealed a block approximately at the eleventh thoracic segment. The subarachnoid space was irrigated with isotonic solution of sodium chloride and the patient seemed to get a slight return of sensation. A laminectomy performed May 11, 1945 under endotracheal ether anesthesia revealed metastatic carcinoma to the cord, dura and vertebrae. The patient died six weeks after the onset of her neurologic complication without ever manifesting any real return of motor function to her legs.

Case 3.—A white man aged 57 had an exploratory laparotomy on July 20, 1945 under tetracaine hydrochloride-dextrose continuous spinal anesthesia plus intravenous pentothal sodium. Far advanced carcinoma of the fundus of the stomach with widespread metastases to the pelvis, retroperitoneal nodes, chest wall and liver was found. Twenty-four hours later the patient was still paralyzed from the umbilicus down. Spinal puncture at the fourth lumbar interspace showed a blockage of the cerebrospinal fluid; the subarachnoid space was flushed out with isotonic solution of sodium chloride, but the patient failed to show a return of motor function. The paralysis, which was felt to be on the basis of a metastatic carcinoma to the vertebrae and structures surrounding the cord, persisted.

Cases 2 and 3 bring out the danger that spinal anesthesia will precipitate a neurologic disease which already exists, and these cases also demonstrate the toxic properties of anesthetic agents when the local concentration is too high.

Case 4.—A white man aged 66 who had lost considerable weight underwent a subtotal gastric resection for carcinoma of the stomach on April 3, 1945. Twenty milligrams of 1 per cent tetracaine hydrochloride mixed with one and a half times as much 10 per cent dextrose was given in two doses by the continuous method to provide anesthesia for a two-hour operative procedure. The patient made an uneventful recovery and was discharged from the hospital. On a subsequent visit two months later, he was found to have a left foot drop. No other neurologic observations were discernible on physical examination. The opportunity for a follow-up study on this patient was interrupted by his death in October 1945, seven months after his operation, from recurrence of his original disease.

Case 5.—A white man aged 43 had undergone a cholecystectomy four years prior to Dec. 10, 1945 when he was seen at the Lahey Clinic because of persistent jaundice. Eight days later a repair of a common duct stricture was performed under tetracaine hydrochloride-dextrose continuous spinal anesthesia with a cyclopropane supplement. A total of 26 mg. of the tetracaine was used over a three hour period. When the patient was allowed out of bed following this operation, he noticed what he thought was some weakness in his right ankle. Three months later there was definite weakness of the dorsal flexors of the right foot as well as of the posterior tibial and peroneal muscle groups. On comparing the size of his two legs, the right calf was ¾ inch smaller than the left.

Patients Suspected of Having Postspinal Neurologic Complications

Case 6.—On May 27, 1944, a 58 year old white woman was given a spinal anesthetic consisting of 17 mg. of 1 per cent tetracaine hydrochloride plus 1.8 cc. of 10 per cent dextrose for the repair of a cystocele, rectocele and uterine prolapse. The anesthesia was satisfactory for an operation of one hour and forty minutes, and its maximum height reached the tenth thoracic segment. Three to four months after this operation the patient complained of severe pain in both legs, and this was gradually replaced by a feeling of numbness and a loss of strength which caused her to fall rather frequently. Her legs soon grew so weak that she was confined to bed. On admission to the hospital twenty months after her operation she had a cord-type bladder with an overflow incontinence. She had a loss of sensation to pin prick extending cephalad to the sixth thoracic segment. Diagnostic lumbar puncture revealed an almost complete cerebrospinal fluid block with an initial pressure of 100 mm. of water and a total protein content of 122 mg. per hundred cubic centimeters. On Feb. 15, 1946 under endotracheal ether a spinal cord tumor (meningioma) was removed opposite the sixth and seventh cervical segments. The patient made a satisfactory recovery.

Case 7.—On March 27, 1945, a 40 year old white woman was given 17 mg. of 1 per cent tetracaine hydrochloride and 2.5 cc. of 10 per cent dextrose for the removal of her gallbladder. Light cyclopropane supplementary anesthesia was administered to render her unconscious. A curare preparation had to be given intravenously to facilitate closing the peritoneum after one and one-half hours had elapsed, as the patient's abdominal muscles were no longer relaxed.

During her postoperative convalescence she complained of some pain in her right leg, hip and ankle and had an unexplained elevation of temperature. Although the signs were not definite, anticoagulation treatment was instituted on the assumption that she was suffering from a pelvic thrombophlebitis. At the end of three weeks, after being up and around the ward for two days, she left the hospital.

Eight months later the patient was readmitted to the hospital because of an obvious neurologic disturbance in the function of her legs. The reflexes were hyperactive at the knee and ankle, and clonus was present. She could raise her left leg, but all motor power in her right leg was absent except for some slight motion in the toes. A loss of sensation was elicited to the tenth thoracic segment. Constipation caused much concern, as did an alternating urinary frequency and incontinence.

On Dec. 14, 1945 under endotracheal ether anesthesia a laminectomy was performed from the seventh thoracic to the first lumbar segment, and lysis of arachnoidal adhesions and constricting bands with decompression of the spinal cord was carried out. An intramedullary tumor at the level of the eighth and ninth thoracic segments was seen, and around this area the arachnoid was decidedly thickened with dense adhesions to the cord. Postoperatively the patient showed slight improvement with some return in motor function of the legs. Many of her neurologic signs persisted, however, and she was advised to have deep radiation therapy, which she refused.

Patients Seen in Consultation

Case 8.—In September 1940 a white woman aged 44 received 16 mg. of tetracaine hydrochloride with 3 cc. of dextrose for a cholecystectomy. Anesthesia did not wear off. The patient showed typical signs of a cauda equina injury, with loss of bowel and bladder function and loss of motor function in the legs. This persisted for eight months, but gradually she obtained a return of motor function and was able to walk. She had signs of a cord bladder and the rectal sphincter was relaxed. After being able to carry on normal activities, she gradually grew worse and lost the use of her legs. In 1943 a laminectomy was performed for the relief of arachnoidal adhesions. During the postoperative period her atonic bladder was treated by tidal irrigation according to the method described by Munro,[24] and this caused appreciable improvement in bladder function. Following the release of the arachnoidal adhesions there was improvement in the motor function of her legs, but this improvement has not been sustained and a gradual retrogression has ensued. On examination in September 1945, spastic paraplegia with mass-type reflexes was found to be present. The saddle area was anesthetic, and there was loss of sensation to pinprick up to the eighth thoracic segment. Her bladder is of the atonic type, and the anal sphincter is relaxed. This patient, now almost totally paralyzed below the waist, is a problem in rehabilitation and will need the special care described by Munro[25] to control her spastic paraplegia and her urinary difficulties.

Case 9.—On May 25, 1943 a white man aged 42 was given a spinal anesthetic of tetracaine hydrochloride plus dextrose for repair of a left inguinal hernia. The surgeon said the induction of anesthesia was unsatisfactory, as the patient was able to move his legs for one-half hour. Twenty-four hours later he showed loss of bowel and bladder function, with almost complete motor paralysis of his legs. All this was reported to have cleared up in three weeks.

When seen in the neurosurgical department of the clinic on Jan. 14, 1944, however, the patient had multiple complaints related to this episode. He complained of constipation, numbness in the region of the rectum and loss of sensation in the area of the scrotum and penis. Physical examination revealed an area of anesthesia over the fifth sacral nerve distribution in addition to a rather well defined area of obtunded sensation over the scrotum and penis. The rectal sphincter, although greatly relaxed, was functioning efficiently. Spinal fluid dynamics and an oxygen pneumospinogram were found to be within normal limits.

Case 10.—In October 1945 a white woman aged 61 had her gallbladder removed under continuous spinal anesthesia. A 5 per cent procaine hydrochloride solution dissolved in spinal fluid was used. A total of 125 mg. of this drug, administered in three divided doses, provided adequate anesthesia for the operation. At the time the spinal puncture was performed, however, the patient noticed severe paresthesia which extended down the leg into the plantar surface of the right foot. After the operation it was observed that the patient had a right foot drop, a loss of sensation below the right knee and an area of saddle anesthesia which was more pronounced on the right side.

When the patient was seen in the neurosurgical department of the Lahey Clinic sixteen months later, the complications previously described were still present in the right leg. The patient was found to have normal motor power in the quadriceps, adductor and abductor groups of the thigh muscles. She was also able to carry out a few degrees of plantar flexion of the right foot. The spinal fluid dynamics as well as an oxygen pneumospinogram was found to be within normal limits. It should be noted that this patient had a radical mastectomy five months before her cholecystectomy was performed, and the possibility of metastatic malignant growths cannot be overlooked as an etiologic factor in this complication.

Case 11.—In February 1945 a 58 year old white woman complaining of paralysis of the left leg of two years' duration was seen in the neurosurgical department of the clinic. This paralysis came on immediately after 150 mg. of procaine hydrochloride was given to provide spinal anesthesia for a hysterectomy. The patient experienced a sharp paresthesia down her left leg at the time the spinal puncture was performed. The operation was uneventful, and the return of motor and sensory function took place in a normal manner except in the left leg and sphincter vesicae. Voluntary control of urination was soon regained.

On examination two years later, there was complete loss of pain, temperature and tactile discrimination below the twelfth thoracic segment on the left side. All the muscles in the left leg were paralyzed except the quadriceps, abductor and adductor of the thigh. Although the patient could void voluntarily, 4 ounces (113 Gm.) of residual urine and persistent pyuria were present.

Cases Reported to Us by Other Surgeons and Anesthesiologists

Case 12.—A 30 year old white woman had been suffering from an apparent radiculitis with girdle pain which extended from her neck down to her lower abdomen. Two days before an operation for acute appendicitis was performed, lesions typical of chickenpox appeared on the body. A spinal anesthetic of 15 mg. of tetracaine hydrochloride and 1.5 cc. of 10 per cent dextrose was given for the appendectomy. The appendix was gangrenous but not ruptured, and the operation was uneventful.

The postoperative convalescence was normal for six hours, with the return of sensory and motor function in the extremities. This was followed, however, by complete paralysis, both motor and sensory, below the waist, with loss of bowel and bladder function. Associated with this, the patient complained of severe pain in the back, which the consulting neurologist interpreted as being due to radiculitis. Her recovery was gradual. First, the motor power, then sensation returned to the legs, and last of all the bowel and bladder function became normal. Seven weeks after the operation the patient left the hospital apparently fully recovered. It was thought that the paralysis was the result of myelitis caused by the chickenpox virus, with the spinal anesthesia acting as the exciting agent.

Case 13.—A 59 year old white man was given 10 mg. of tetracaine hydrochloride and 30 mg. of procaine hydrochloride for an anticipated rectal operation. The patient had a severe stabbing pain in the back at the site of the lumbar puncture; the pain came on as the anesthetic agent was injected. Sensation gradually diminished in the right leg and then in the left until the level of anesthesia reached the umbilicus. The operation was begun but had to be interrupted because of the severe pain which the patient experienced in his back. A week later he was still paralyzed below the waist and showed a loss of bowel and bladder control. A Pantopaque[26] spinogram was normal. The patient returned to his home where he showed gradual improvement. After three months his bowel and bladder functions were normal, and there had been some improvement in the motor power of the lower extremities. The severe pain persisted in his back. Five months after the onset of this complication, without apparent cause, he suddenly died. Permission for an autopsy could not be obtained.

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[24] Munro, D.: The Treatment of the Urinary Bladder in Cases with Injury of the Spinal Cord, Am. J. Surg. **38**: 120-136, 1937; Tidal Drainage and Cystometry in the Treatment of Sepsis Associated with Spinal-Cord Injuries: A Study of One Hundred and Sixty-Five Cases, New England J. Med. **229**: 6-14 (July 1) 1943.

[25] Munro, D.: The Rehabilitation of Patients Totally Paralyzed Below the Waist, with Special Reference to Making Them Ambulatory and Capable of Earning Their Living: I. Anterior Rhizotomy for Spastic Paraplegia, New England J. Med. **233**: 453-461, 1945; II. Control of Urination, ibid. **234**: 207-216, 1946.

The ampules containing the anesthetic agent had been soaked in a solution containing alcohol and formaldehyde, and the possibility that this corrosive mixture had leaked into one of these ampules and had ultimately been injected in the subarachnoid space was considered.

REGIMEN FOR THE PREVENTION OF POSTSPINAL NEUROLOGIC COMPLICATIONS

1. The cleansing and sterilizing of apparatus used in the administration of spinal anesthesia should be carefully supervised. The routine rinsing of syringes and needles with sterile isotonic solution of sodium chloride is an additional precaution.

2. Drugs should be used from manufacturers' ampules whose labels are legible, whose walls are intact and whose contents on routine inspection before use are clear and free from insoluble particles or crystals.[27]

3. Ampules containing spinal anesthetic drugs should be sterilized by soaking them in a nonirritating, colored sterilizing solution such as a 1 to 1,000 solution of high molecular benzalkonium chloride (Zephiran). The addition of a dye such as methylene blue to the solution in which ampules are immersed is of value in detecting the occasional defective ampule into which the sterilizing solution has leaked. Irritating solutions containing alcohol, phenol or formaldehyde should not be used because of the danger of their entering the ampule through microscopic breaks and in turn being injected into the subarachnoid space.

4. Solutions containing even a faint suggestion of turbidity or cloudiness should be discarded.

5. Spinal puncture should not be made through or near areas of infection.

6. Spinal anesthesia should not be given to patients with known spinal cord disease, such as tabes dorsalis, multiple sclerosis, pernicious anemia with symptoms of combined system disease and tumors of the spinal cord. Patients who have herniated intervertebral disks with signs of peripheral nerve paralyses, loss of bowel and bladder functions or an elevation in the total protein content of the spinal fluid should not be given spinal anesthetics.

7. Patients suffering from known virus infections such as poliomyelitis or chickenpox should not be given spinal anesthetics (for example, case 13).

8. A history of delayed return of motor function or severe paresthesias following a previous spinal anesthetic should be considered a contraindication to the subsequent use of this type of anesthesia.

9. If the spinal puncture causes a radiating paresthesia, the anesthetic agent should not be injected until adjustment of the needle has freed the patient of this pain (cases 10 and 11).

10. A persistently bloody spinal tap contraindicates the injection of a spinal anesthetic agent.

11. Routine determinations of the spinal fluid dynamics should be carried out on all patients complaining of intractable back pain or pain that seems out of proportion to the pathologic condition for which the surgical procedure is being performed. Experience has shown that spinal cord pathology (metastatic disease or primary carcinoma) can be detected in a certain number of these patients by such a routine. Hand[27] discovered 4 patients with a spinal fluid block by carrying out routine spinal fluid dynamics on a series of 60 patients whose intractable pain he was attempting to relieve by subarachnoid injections of ammonium sulfate. Cases 2 and 3 are examples of what can happen when a patient with spinal cord disease which is producing a spinal fluid block is given a spinal anesthetic.

12. When it has been difficult or impossible to obtain the desired height of anesthesia by the ordinary methods, a spinal fluid block should be suspected. It is advisable at the termination of such a spinal anesthesia to flush out the subarachnoid space with isotonic solution of sodium chloride to remove any residual anesthetic solution.

MANAGEMENT OF PATIENTS WITH CAUDA EQUINA SYNDROME FOLLOWING SPINAL ANESTHESIA

A patient who shows a delay in the return of motor and sensory function following spinal anesthesia should be considered for emergency treatment and immediate attention is warranted. Each step in the sequence of events leading up to the mishap demands careful investigation. A complete history and physical examination in addition to a review of the preanesthetic information should be obtained. The extent of the impairment of nerve function must be ascertained and recorded. It is of paramount importance that the functional state of the bowel and bladder be determined so that treatment, if needed, may be instituted immediately. Tidal irrigation of the bladder as described by Munro[24] offers a real chance for full recovery of function without infection of the urinary tract. It is extremely difficult to give an effective cleansing enema by ordinary measures to a patient whose rectal sphincter is incompetent. However, if a large Foley catheter is inserted into the

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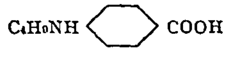
[26] Pantopaque, Eastman Kodak Company, is a mixture of ethyl esters of isomeric iodophenylundecylic acids.

[27] Crystals in solutions of tetracaine (Pontocaine) hydrochloride; personal communication from Dr. M. L. Tainter, Director of Research, Winthrop Chemical Company, Inc., Rensselaer, N. Y. Tetracaine hydrochloride, in common with all the synthetic local anesthetics of this general type, slowly hydrolyzes in water to produce 4-N-butylaminobenzoic acid.



This compound is 0.0087 per cent soluble in water at the p_H of tetracaine hydrochloride solutions (3.5 ± 0.5) at room temperature. It is freely soluble in the presence of traces of alkali. When the degradation of the tetracaine has proceeded to a point where the solution is supersaturated with respect to this new compound, then crystals gradually develop. The time required for this is dependent on temperature, the concentration of the solution and other more variable factors. A solution containing such crystals obviously should not be used. Nevertheless, since an occasional crystal might be inadvertently injected, it is desirable to know whether these crystals might exert any untoward effects. Dr. Tainter made a solution of these crystals by dissolving them in the required amounts of alkali and injected 300 mg. per kilogram of body weight intravenously in rats without untoward result. Tetracaine hydrohloride has an $L.D._{50}$ (dosage lethal to 50 per cent of the rats) of 6.0 ± 0.5 mg. per kilogram of body weight under the same conditions. Instillation of a suspension of the crystals into the conjunctival sac of rabbits produced no anesthetic effect in 5 out of 6 rabbits. A 1 per cent solution of butylaminobenzoic acid was injected into the subarachnoid space of rabbits in volumes of 0.02 cc. per centimeter of spinal length, which is the standard quantity used in the study of spinal anesthetics for this particular species of animal. Anesthesia did not result. One half of the animals were killed after forty-eight hours and the other half after ninety-six hours. There was no evidence of hyperemia or other inflammatory changes in any of the animals.

From these experiments Dr. Tainter concluded that the butylaminobenzoic acid sometimes found in tetracaine hydrochloride solutions as a crystalline precipitate is an inactive compound when injected intravenously or intrathecally in experimental animals.

rectum and the cuff inflated, an effective enema can be administered.

In order that preexisting pathologic change in the spinal cord may be discovered, any patient in whom there develops a postspinal cauda equinal complication should have an investigation of his spinal fluid dynamics. In conjunction with this maneuver, it is advisable to irrigate the subarachnoid space with isotonic solution of sodium chloride to insure the removal of any remaining anesthetic agent. This attempt to remove any residual anesthetic agent takes on additional significance when a spinal fluid block is discovered. When the abnormal observations in the spinal fluid are limited to an elevation in the total protein and in the lymphocytic cell count, daily spinal punctures for the withdrawal of fluid should be performed.

During the period of recovery, the duration of which may be extremely variable, the nursing routine must be a vigorous one if decubital ulcerations, ankylosed joints, malnutrition and muscular atrophy are to be avoided.

Certain of these complicated cases may require special and intensive treatment before the patient can be rehabilitated. Especially is this true of those patients who suffer from uncontrolled urination or those in whom there has developed a spastic paraplegia with mass reflexes. If tidal irrigation is properly applied over a sufficiently long period, Munro[25] has stated that: "Every patient who has sustained an injury to the spinal cord, conus or cauda equina who is intelligent and cooperative can have infallible twenty-four-hour control of urination." Munro[25] has also shown that patients paralyzed below the waist can be made ambulatory and capable of earning a living. He advocates anterior rhizotomy for the relief of the spasticity. Then, by the use of braces and crutches, these people can be made ambulatory.

ABSTRACT OF DISCUSSION

DR. J. ARCHER O'REILLY, St. Louis: I feel that a spinal puncture or the giving of spinal anesthesia should be considered a major surgical procedure. I think, sometimes, that fact is overlooked. In the St. Louis University group of hospitals it is required that a trained medical anesthetist shall give all spinal anesthesias and supervise them. For that reason we probably have comparatively few complications. In reviewing the cases that have been treated by the orthopedic service—and a good many patients have had spinal anesthesias under other men—I cannot find any very serious complications. We have had headaches, but I cannot think of any serious paralysis or any other complications. Again I think that is probably due to the fact that we insist on having trained men. I feel that from this paper there is a definite lesson to be learned. Complications are fairly frequent. Some of the complications are very serious. One of the things we must learn is that the surgeon must know his patient. The surgeon who uses spinal anesthesia to any great extent should have enough experience and should be able to evaluate the patient and be able to understand the possibilities of complication before he jumps into a spinal anesthesia. That is a serious and vital responsibility on the part of the operating surgeon. What I get from this paper is the fact that spinal anesthesias may cause considerable damage. The point that is especially important is the fact that spinal anesthesias should be given by men who are competent and should be under the supervision of surgeons who know what spinal anesthesia is and may do and that it should not be entered into lightly.

DR. A. M. CAINE, New Orleans: I want to emphasize something said; that is, the coloring of the solution in which the ampules are kept. I had two sloughs in the skin from the administration of a small portion of 1 per cent procaine with ephedrine. I could not think of any reason why that took place, and since I could not think of any other reason I put my ampules in a colored solution, since which time I have found a dozen that were colored. There is no reason at all why, in using solutions of procaine that are made instead of crystals—or pontocaine or nupercaine, or any other agent—one should not get some alcohol in these solutions unless they are put up in a container with a colored solution, so that one can find out. I have thought that a good many complications might be due to the size of the needle until I found out the size of the needle that the neurologists use in spinal puncture, which is a very large needle indeed. They have many headaches, and they expect them. I think the size of the needle may have something to do with the headaches. But from what Drs. Nicholson and Eversole say practically no neurologic complications have been reported by them. But I know of 1 case in which, when the anesthetist pulled the stilet out, blood came trickling out. She put it back half an inch and put it into the spinal canal. That particular operation was for abdominal anal resection. No complication had been reported to me or to our anesthetist. The patient reported to me ten months later that his whole bottom had been dead ever since the operation. I feel that in this case it was due to a hematoma resulting from the original puncture, which went all the way through and a half inch back before the anesthetist got back into the subarachnoid space.

CAPTAIN JOHN DILLON, M. C., A. U. S.: It is absolutely necessary that studies of anesthetic complications be made. However, there is one thing that has not been brought out. That is the relationship of these complications to the drug, the amount of the drug and the hypobaricity or the hyperbaricity of the drug. These things are very important. I cannot speak from personal experience or give any data on this topic, but if the subject is to be worked out so that these complications will be cut down to a minimum some thought must be given to these factors, particularly to the hyperbaricity. We are not at all certain as to how spinal anesthesia works, or at all sure how any anesthesia works, for that matter, but it would seem that there must be some surface phenomenon which goes on between the nervous tissue and the drug which is opposed to it, and that the osmotic relationship between these two surfaces come into play. As Dr. Betlach brought out, you can get perfect anesthesia with 35 mg. of spinal anesthesia. I wish to go further and say that I have seen it as low as 12.5 mg. I wonder sometimes if we are not hitting a tack with a sledge hammer, because in years gone by it was nothing to read that a patient had been given 300 mg. of procaine for operations that certainly did not require it.

DR. URBAN H. EVERSOLE, Boston: As Dr. O'Reilly pointed out, the incidence of neurologic complications following spinal anesthesia is very low. In our own experience we gave approximately 21,000 anesthetics by the same technic before we had a serious neurologic complication. On the other hand, this low incidence must not lead us to minimize the gravity of such a complication. I certainly agree with Dr. Dillon that it is important to consider these complications in relation to the specific gravity of the anesthetic mixture employed. There is little doubt that neurologic complications following spinal anesthesia bear a definite relationship to the concentration of the drug. Clinical evidence of this is that most of these complications are in the cauda equina, where the drug is most likely to be present in the highest concentration. We know that the concentration of an anesthetic agent at any given point in the spinal canal has a very definite relationship to the specific gravity of the solution employed. As mentioned in the paper, the concentration commonly employed for spinal anesthesia may be but little short of that which would cause neurologic complications in a much greater number of patients.

SUBDURAL HEMATOMA

HAROLD C. VORIS, M.D.
Chicago

This report is based on the observations in 100 consecutive patients with subdural hematoma on whom I have operated. This group of cases is large enough to be somewhat heterogeneous but has many common features. Cases of infantile subdural hematoma have not been included. The majority (73) of the patients are from my neurosurgical service at the Cook County Hospital, the rest (27) from my private practice. They represent an eleven year period, from 1935 to 1945 inclusive. Hematomas less than 3 mm. in thickness or an estimated 10 cc. in volume are not included.

The subject of subdural hematoma has aroused great interest in the past, and an extensive literature has accumulated. Groff and Grant[1] prepared an excellent collective review in 1942 in summary of the literature to that date. They classified the causes under the headings "spontaneous" and "traumatic." Under each of these headings primary and secondary causes were listed. Primary spontaneous causes were infectious and neoplastic; secondary spontaneous causes were the predisposing factors of systemic disease, alcoholism, arteriosclerosis and blood dyscrasias. Trauma was described as a primary cause and also as a secondary or precipitating cause in the presence of one of the predisposing factors listed under spontaneous causes.

PATHOGENESIS

In the recent literature the trend has been to consider trauma as the most important etiologic factor. The normal anatomy of the cerebral veins has long been recognized as important in the production of subdural hemorrhage. The term "bridging veins" may be applied to the veins that cross the subdural space to the dural venous sinuses and also to the veins that cross the subdural space traveling between the arachnoid and dura but emptying directly into any sinus. The first group includes the superior cerebral veins, the inferior cerebral veins that enter the sphenoparietal sinus and the veins that enter the lateral sinus from the posterior or inferior surface of the temporal lobe. Other veins cross from the cerebral arachnoid of the convexity of the hemisphere to the dura at a distance of 1 to 4 cm. from the superior longitudinal sinus, traverse the subdural space from the arachnoid of the base of the temporal lobe to the dura of the middle fossa and to the tentorium cerebelli, cross from the tip of the temporal lobe to the dura over the sphenoid bone, or enter the dura from the lateral convexity of the hemisphere at any point. All these veins are familiar to the neurosurgeon because they limit his manipulations when he explores the subdural space.

It is obvious that displacement of the brain in the intracranial cavity, especially in the longitudinal axis, may tear these veins as they cross the subdural space and may produce primary subdural hemorrhage. Beginning with Trotter[2] many authors have recognized this as the probable initial step in the production of a subdural hematoma. However, experimental proof of this has been lacking until Sheldon, Pudenz and Restarski[3] demonstrated experimentally subdural ("sublucite") venous bleeding following parietal subconcussive blows in monkeys in whom the convex portion of the skull had been replaced by a transparent Lucite calvarium. This experimental demonstration supports the clinical supposition that an initial hemorrhage into the subdural space is the first stage in the development of a subdural hematoma. Such hemorrhage is most apt to occur from superior cerebral veins but often occurs from other groups, so that while the majority of traumatic subdural hematomas occur over the convexity of the cerebral hemisphere they are found inferiorly in the temporal region both anteriorly and posteriorly, occasionally beneath the frontal and temporal lobes and even in bizarre locations, such as between the hemispheres (Aring and Evans[4]) or beneath the tentorium cerebelli (Munro[5]).

In the present series trauma was by far the most important factor, as a definite history of antecedent injury to the head was obtained in 96 of the cases. The time between the injury and the operation ranged from a few hours to six months. Injuries which dated back more than six months from the time the patient was first seen were not accepted as possible causes; in fact, any injury which occurred more than three months before the onset of symptoms was regarded with suspicion. There were only 2 such cases in the series.

In the great majority of instances the clots were located over the superior convexity of the hemisphere. Some were more lateral and inferior, extending down to the base. None was truly beneath the hemispheres, and there were no subtentorial hematomas in this series.

Although trauma was the primary causative factor in the vast majority of the cases, there were a few patients with other preexisting cerebral lesions that obviously predisposed to the subdural hemorrhage.

Neoplasm has frequently been mentioned as a predisposing factor. Russell and Cairns[6] reported 4 cases of carcinomatosis and sarcomatosis of the dura with formation of a subdural false membrane. In 1 patient in this series a subdural hematoma was found over a glioblastoma multiforme of the temporal lobe.

A 45 year old man was struck on the forehead by a heavy object and knocked down. He was dazed but did not lose consciousness. After this incident headaches persisted, and two months later disorientation and mental confusion appeared. Six months after the injury right hemiparesis and aphasia developed and he was admitted to the Cook County Hospital, eight months after the injury. At the time of admission he was stuporous, with complete right hemiplegia and aphasia and bilateral papilledema of 2 to 3 D. The pressure of the spinal fluid was 210 mm., and the fluid was xanthochromic. Because of the history of injury, a subdural hematoma was suspected, although the interval seemed rather long. Bilateral parietal bur holes did not confirm the suspicion. Ventriculography revealed a space-occupying lesion in the left frontotemporal region. An osteoplastic craniotomy revealed a small completely organized subdural hematoma in the left anterior temporal region. The membranes of this hematoma were completely fused with organization of the contents. The hematoma was only 3 mm. thick. Beneath it a glioblastoma multiforme came to the surface of the anterior part of the temporal lobe.

From the Clinics of Mercy Hospital and Loyola University and from the Cook County Hospital.

Read before the Section on Nervous and Mental Diseases at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

[1] Groff, R. A., and Grant, F. C.: Chronic Subdural Hematoma, Internat. Abstr. Surg. **74**: 9-20, 1942; in Surg., Gynec. & Obst., January 1942.

[2] Trotter, W.: Chronic Subdural Haemorrhage of Traumatic Origin, and Its Relation to Pachymeningitis Haemorrhagica Interna, Brit. J. Surg. **2**: 271-291, 1914.

[3] Sheldon, C. H.; Pudenz, R. H., and Restarski, J. S.: The Lucite Calvarium; a Method for Direct Observation of the Brain: II. Cranial Trauma and Brain Movement, Naval Medical Research Institute and United States Naval Hospital, Research Project X-182, Report no. 2, *1946.*

[4] Aring, C. D., and Evans, J. P.: Aberrant Location of Subdural Hematoma, Arch. Neurol. & Psychiat. **44**: 1296-1306 (Dec.) 1940.

[5] Munro, D.: The Diagnosis and Treatment of Subdural Hematomata, New England J. Med. **210**: 1145-1160, 1934.

[6] Russell, D. S., and Cairns, H.: Subdural False Membrane or Hematoma (Pachymeningitis Interna Haemorrhagica) in Carcinomatosis and Sarcomatosis of the Dura Mater, Brain **57**: 32-48, 1934.

In another patient a subdural hematoma lay over a vascular malformation of the temporal lobe.

A 28 year old man, a teacher, had been struck over the head two months before I saw him. He had a headache for a few hours but had not lost consciousness and thought that his injury was inconsequential. A month later he began to have seizures involving the upper part of the right arm and the right side of the face without loss of consciousness but with inability to speak during the seizure. The tendon reflexes were exaggerated on the right, there was a right Hoffmann sign and bilateral papilledema of 1 to 2 D. The injury was considered inconsequential and a diagnosis of left cerebral tumor was made. Osteoplastic exploration revealed a chronic encapsulated subdural hematoma over the left frontoparietotemporal region with its greatest thickness over the temporal lobe. It was removed *in toto* and measured 7.4 by 4.5 by 1 cm. Its removal revealed an arteriovenous anomaly of the entire temporal lobe. The sylvian vein was 1 cm. in diameter, and two pencil-sized vessels connected it with the superior longitudinal sinus. These vessels pulsated and obviously carried a mixture of arterial and venous blood. The surface of the temporal lobe was replaced by a pulsating mass of vessels of various sizes. Surgical attack was not attempted because of the location of the lesion on the left side and the obvious immediate danger of such a procedure.

A third subdural hematoma was found in the course of a surgical attack on an intracranial aneurysm.

A 37 year old woman was first seen twelve hours after a severe spontaneous subarachnoid hemorrhage. At that time she was comatose, with a left hemiplegia and a complete right oculomotor palsy. She gradually improved, and six weeks later a cerebral arteriogram revealed a small berry aneurysm of the right anterior cerebral artery about 5 mm. from its origin. A right transfrontal craniotomy was performed, and the right anterior cerebral artery was occluded with a clip proximal to the aneurysm. At this exploration a small, 1 mm. thick, completely organized subdural hematoma was found over the inferolateral aspect of the right temporal lobe.

These 3 cases are of great interest, although they represent only a small fraction of the series. In all 3 instances the arachnoid must have been torn; in the first 2, possibly by trauma, and in the third, perhaps by the force of the hemorrhage. Blood thus entered the subdural space and, possibly because of a ball-valve action of the tear in the arachnoid, remained entrapped in the subdural space. All 3 cases may represent spontaneous hemorrhage; certainly the third does. However, there was a definite history of trauma in the first 2.

The relation of acute and chronic subdural hematoma is a debated point. Groff and Grant suggested the use of the term subdural hemorrhage for the early acute cases and subdural hematoma for the later subacute or chronic cases. Leary[7] classified subdural hematomas under five heads: (1) fresh fluid or soft clots, (2) firm clots, (3) chocolate-colored fluid with a neomembrane on the dural side, (4) chocolate-colored fluid enclosed in a double neomembrane and (5) a fused double subdural neomembrane with absorption or complete fibrous organization of the previously enclosed hematoma.

The important difference between the acute and chronic types is the relative size of the early hemorrhage. Generally the so-called early or acute subdural hematoma is a relatively massive, acute hemorrhage, usually associated with severe cerebral injury, either contusion or laceration. Probably as a rule, the arachnoid is extensively torn and the subdural blood is in free communication with the subarachnoid space. If the patient survives the injury to the brain and the early effects of the cerebral compression, the subdural hemorrhage is absorbed by virtue of its communication into the subarachnoid space. This does not always occur, but seldom do severe cases of injury to the brain later exhibit a chronic hematoma. Such a case is seen infrequently; perhaps here the tear in the arachnoid is small and acts as a ball valve to trap the blood in the subdural space.

Blood trapped in the subdural space is not absorbed. Gardner,[8] Zollinger and Gross[9] and Munro and Merritt[10] developed the now widely accepted theory that the large chronic subdural hematomas result from relatively small initial hemorrhages in the subdural space. In the absence of cerebral injury with bleeding from cortical vessels, the venous pressure in the cerebral veins is so low that bleeding from them soon stops spontaneously. As liquefaction of blood in the subdural space begins, the resultant fluid is high in protein content. Since it is separated from the subarachnoid space by only the arachnoid (and much later by the newly developing neomembrane on the arachnoid side) and since this is impermeable to the large molecules of protein in the liquefying blood, an osmotic imbalance which exists between the cerebrospinal fluid and the liquefying blood in the subdural space results in the passage of fluid into the subdural space. As time goes on and the hemoglobin molecules begin to break down, there is a great secondary increase in molecular concentration following the break-up of the large protein molecules; consequently, there is a late secondary tendency to an increase in the size of the clot.

Many surgeons have felt that repeated hemorrhages were the explanation for the growth of the clot. Certainly when the initial hemorrhage is spontaneous or when a predisposing cause is present there may be successively repeated hemorrhages. Putman,[11] Baker[12] and others have described microscopic evidence of fresh bleeding in the vessels of the membranes of subdural hematomas. However, gross evidence of such bleeding is lacking. None of the hematomas in this series, whatever their age or stage, show lamellation or other evidence of repeated bleeding. In 1 or 2 cases, when the clot was removed fresh bleeding appeared from torn but previously thrombosed veins, but evidence of recent bleeding into the hematoma was not seen. In 1 case, after evacuation of the hematoma the exposed end of a torn but thrombosed cerebral vein was seen above the arachnoid directly beneath the exploratory opening in the parietal region. When the vessel was lightly sponged it began to bleed and required electrocoagulation. The hematoma was thickest over this point and from the history was five days old. It was thought to have been due to a tear of this anomalous "bridging vein" on the parietal convexity of the hemisphere. Loss of blood from this vessel had spontaneously stopped only to recommence after evacuation of the overlying hematoma and the slight trauma of sponging.

An essential question is the primary location of the bleeding, whether subdural or intradural. If it is due to tear of bridging veins, the bleeding must of course be subdural. However, Baker,[12] Hannah,[13] Kamp and Love [14] and others have presented histologic evidence to indicate the intradural origin of these hemorrhages. The most satisfactory histologic preparations come from postmortem rather than from surgical specimens. As a result, the average pathologist is better acquainted with material from large, well encapsulated hematomas of relatively long standing. Leary,[15] who had an enormous experience with subdural hematomas in all stages of their development, was convinced of their subdural rather than intradural origin.

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[7] Leary, T.: Subdural Hemorrhages, J. A. M. A. **103:** 897-903 (Sept. 22) 1934.

[8] Gardner, M. J.: Traumatic Subdural Hematoma: A Report of Twenty-Two Cases, Ohio State M. J. **31:** 660-665, 1935.

[9] Zollinger, R., and Gross, R. E.: Traumatic Subdural Hematoma: An Explanation of the Late Onset of Pressure Symptoms, J. A. M. A. **103:** 245-249 (July 28) 1934.

[10] Munro, D., and Merritt, H. H.: Surgical Pathology of Subdural Hematoma, Arch. Neurol. & Psychiat. **35:** 64-78 (Jan.) 1936.

[11] Putman, T. J., and Putman, I. K.: The Experimental Study of Pachymeningitis Hemorrhagica, J. Nerv. & Ment. Dis. **65:** 260-272, 1927.

[12] Baker, A. B.: Subdural Hematoma, Arch. Path. **26:** 535-559 (Aug.) 1938.

From the surgical point of view three facts can be emphasized:

1. Early traumatic subdural hematomas are not encapsulated, and the inner aspect of the dura lacks evidence of reaction.

2. The first neomembrane to be formed is the one on the dural side, and it is well developed before any definite membrane can be found on the arachnoid side.

3. *Only in old cases are there two neomembranes* equal in development on the dural and arachnoid sides of the hematoma. The early development of the neomembrane on the dural side is to be expected if the initial hemorrhage is subdural, because reaction to a foreign body is much more prompt and more pronounced in the dura than in the arachnoid. If the hemorrhages were really intradural and the inner (arachnoid side) neomembrane represented the inner layer of the dura, it should be present from the onset. At operation the dura always separates readily from the neomembrane of the hematoma. In early cases the inner surface of the dura appears grossly normal; in older cases the dura may appear thickened, with the inner surface roughened and discolored.

Groff and Grant [1] supported the intradural theory *by pointing out the tendency of these hemorrhages to* predominate over the superior convexity of the hemisphere. They stated that this collection of blood and fluid over the superior convexity of the hemisphere defied gravity and favored an intradural rather than a subdural location. However, the living brain behaves physically as a semisolid. When the dura is opened at operation in the absence of increased pressure the brain falls away from the dura and settles down into the intracranial cavity. It probably does the same thing when bleeding occurs into the subdural space over the convexity of the hemisphere, thus preventing the blood from settling to the base. According to Munro and Merritt [10] the age of a subdural hematoma can be rather accurately determined by microscopic study of the neomembranes and total protein determinations of the fluid removed at operation. I have not been able consistently to correlate these factors with the known histories of injury. The 2 following cases illustrate the difficulty in such correlation.

A 30 year old man fell and struck the back of his head six weeks before admission to the hospital. Headache had been present since the fall, and his family and the patient (later) were certain there had not been any other injury. He was stuporous, with bilateral papilledema and left hemiparesis. At operation a large semisolid subdural clot was found in the left parietotemporal region without evidence of liquefaction, neomembrane formation or dural reaction. Grossly, it appeared to be of recent origin, at most a few days old.

A 31 year old man received a blow to his head two hours before admission to the hospital. He was stuporous at admission, and he fluctuated between semicoma and periods of relative responsiveness and confusion during the next five days. *Left hemiparesis developed. The spinal fluid pressure* was 110 mm. and the fluid was xanthochromic. Surgical intervention revealed a right subdural hematoma that was largely liquefied, although partially organized fragments of clot were evacuated. A well formed neomembrane was present on the dural side and a definite but less well developed neomembrane next to the arachnoid.

These 2 cases stand in decided contrast to each other and illustrate the variability between the age and the stage of the development of the hematoma. These variations are probably due to differences in the size of the initial hemorrhage, to whether or not the arachnoid is injured and to individual variations in the reaction of the dura to blood in the subdural space.

The relation of subdural hygroma to subdural hematoma must be considered. Many have considered this *lesion to be a variant of subdural hematoma, representing* cases of an extremely limited initial subdural hemorrhage which eventually as a result of great dilution by osmosis became only xanthochromic fluid. The protein content of these fluids is surprisingly high, although they do not coagulate when removed. In 1 case the fluid removed at operation contained 2,000 mg. of total protein. Da Costa and Adson [16] considered subdural hygroma to be a separate clinical entity. They reported a case in which a tear in the arachnoid was demonstrated at operation. It had apparently not only allowed cerebrospinal fluid to enter the subdural space but also acted as a valve to prevent its return to the subarachnoid space.

In the present series there were 9 cases classified as subdural hygroma. Six of these were from two to *six weeks old; the other three, a week or less.* It appears that the first group might well represent the end stage of dilution of an exceedingly small subdural hemorrhage. In all these cases there were well developed neomembranes. The 3 recent cases lacked neomembranes, and it is likely that they were formed by the mechanism demonstrated by Da Costa and Adson.[16] In all 3 cases there was an associated contusion or laceration of the brain. Subarachnoid hemorrhage with consequent admixture of blood with the spinal fluid would account for the xanthochromia. Unfortunately, total protein determination was not performed in these cases. Scott [17] reported a case of acute subdural hygroma which consisted of clear fluid with a simulation of extradural hemorrhage. It seems that adequate proof of a subdural hygroma should consist of demonstration of (1) *a tear in the arachnoid,* (2) xanthochromic fluid or (3) high protein content in the fluid.

SYMPTOMS AND DIAGNOSIS

Men and women are probably equally susceptible to subdural hematomas, but as a result of the greater frequency of head injury in males such injuries are much more common in that sex (table 1). Subdural hematoma occurs at any age but is rare between infancy and young adulthood. The fourth, fifth and sixth decades of life provide the most cases. As in head injury generally (Voris, 1945 [18]), the increasing age of the patient is an important factor in the determination of mortality. In a previous paper (Voris, 1941[19]) the common signs and symptoms of subdural hematoma have been discussed. Experience with a larger group of cases has changed my opinion in regard to the relative frequency of some of the signs and symptoms; it has not otherwise altered the opinions I expressed in 1941.

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[13] Hannah, J. A.: The Aetiology of Subdural Hematoma, J. Nerv. & Ment. Dis. **84**: 169-186, 1936.

[14] Kamp, D. H., and Love, J. G.: "Subdural" Hematoma, Surg., Gynec. & Obst. **67**: 87-93, 1938.

[15] *Leary, T.:* Subdural or *Intradural Hemorrhages?* Arch. Path. **28**: 808-820 (Dec.) 1939.

[16] Da Costa, D. G., and Adson, A. W.: Subdural Hydroma, Arch. Surg. **43**: 559-567 (Oct.) 1941.

[17] Scott, M.: Acute Subdural Hydroma Simulating Syndrome of Extradural Hemorrhage, Surgery **13**: 152-153, 1943.

[18] Voris, H. C.: Factors Influencing Mortality in Head Injury, *Radiology **44**: 166-170, 1945.*

The differentiation between acute and chronic forms of subdural hematoma is important not only from the standpoint of pathogenesis but also from that of treatment and prognosis. The most convenient classification from a clinical point of view is on the basis of elapsed time between the injury and the operation on the patient (table 2). That the elapsed time was between injury and surgical intervention, not between injury and the onset of symptoms should be kept in mind. In many of the older cases symptoms such as headache, dizziness or mental disturbance had been present for some time before surgical intervention, perhaps even from the time of injury.

The high mortality in acute subdural hematoma is seen at a glance. It is prohibitive for the very early cases and extremely high during the first week. Ten cases in which the operation was performed within three days after the injury was sustained were reported in 1941; in only 4 additional cases have acute subdural hematomas been operated on since, and those under the diagnosis of extradural hemorrhage.

TABLE 1.—*Distribution of Patients by Age and Sex with Mortality Rate for Each Decade*

	Total	10-20	20-30	30-40	40-50	50-60	60-70	70+	?
Males	88	1	10	16	27	17	13	1	3
Females	12	..	1	5	2	1	3	..	..
Recovered	70	1	10	16	21	15	7	..	..
Dead	30	..	1	5	8	3	9	1	3

The clinical differentiation between acute subdural and extradural hemorrhage is often difficult, if not impossible. The early subdural hemorrhages are generally massive; they are always associated with cerebral injury and often with laceration. The bleeding is usually venous but may be arterial from torn cortical vessels. As previously indicated, since 1941 I have operated on these patients only in the course of explorations for extradural hemorrhage. The acute subdural hemorrhage it is well to leave alone. If the patient survives, the hemorrhage is perhaps often absorbed through tears in the arachnoid. As previously stated, chronic subdural hematoma is not often seen in patients with severe early symptoms after injury to the head.

The clinical course of chronic subdural hematoma is of two general types. In the first, subjective symptoms are present from the time of a mild or moderately severe head injury. These cases predominate in this series. In the majority, the relationship of the injury to the symptoms is evident; the only question is the existence of a subdural hematoma.

In another group of patients, the injury was trivial, has been forgotten, or is not known to friends or relatives. These patients are suspected of having a brain tumor, cerebral vascular disease, an encephalopathy or encephalitis. If mental symptoms predominate, the diagnosis of one of the psychoses may be made. If the patient is admitted to the hospital in coma, uremia or diabetes may be suspected. In this instance the value of spinal puncture in the differential diagnosis of coma should be emphasized. Fluctuation of symptoms, especially of the state of consciousness, is often seen and is at times dramatic.

A 66 year old man was seen late at night in consultation. He was deeply comatose, with generalized rigidity of the extremities, Cheyne-Stokes respirations and a rectal temperature of 105 F. The spinal fluid was said to have been clear but under increased pressure. The optic fundi were not elevated. He was thought to be moribund, but the administration of 100 cc. of 50 per cent sucrose intravenously was advised and a ventriculogram was planned for the next morning if he survived. By morning (eight hours later) he was conscious, alert and asking for food. His family refused to permit a surgical procedure at that time. A history of slight injury to the head five weeks previously was obtained. The diagnosis was changed from a suspicion of brain tumor to subdural hematoma, and relapse was predicted. Three days later the patient lapsed again into coma. The family readily consented to an operation, which revealed bilateral, large, fairly well encapsulated, liquid, subdural hematomas. Recovery was uneventful.

TABLE 2.—*Classification of Patients, with Mortality According to the Period from Injury to Operation*

	1-3 Days	3-7 Days	1-4 Wks.	1 Mo. or More	No History of Injury
Total	14	9	47	26	4
Recovered	1	3	40	22	4
Dead	13	6	7	4	..

Some type of mental disturbance ranging from a mild personality change to stupor or coma was the most common observation (table 3). The mental picture may fluctuate greatly but grows worse with the passage of time. Confusion and disorientation which progress to stupor and coma are the most commonly observed manifestations. Simulation of one of the organized psychoses is infrequent but occasionally occurs.

Weakness or paralysis of one side of the body with abnormal or pathologic reflexes is usually contralateral to the hematoma; occasionally the contralateral crus cerebri is pressed against the free edge of the incisura tentorii, and hemiparesis and pyramidal tract signs are thus produced homolateral to the clot. Some type of localizing neurologic observations were present in 75 cases; contralateral to the lesion, in 63; homolateral, in 12. The presence of hemiparesis or signs of unilateral involvement of the pyramidal tracts after a head injury, especially if progressive, is strong presumptive evidence of a hematoma, but these results may be produced by localized injury to the brain.

TABLE 3.—*Signs and Symptoms in One Hundred Surgically Verified Cases of Subdural Hematoma*

Mental disturbances		90	Papilledema		37
Localizing pyramidal signs		75	Convulsions		29
Contralateral	63				
Homolateral	12		Slow pulse		29
Headache		62	Spinal fluid examination		85
			Bloody	14	
Dilatation of pupil		45	Xanthrochromic	55	
Contralateral	5		Clear	16	
Homolateral	40				

Headache, as might be expected, was a common symptom, which occurred in 62 cases. Unilateral dilatation of the pupil occurred in 45 patients. It was homolateral to the lesion in 40 and contralateral in 5. It is thus not only a valuable symptom of a developing

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19. Voris, H. C.: The Diagnosis and Treatment of Subdural Hematomas, Surgery **10**: 447-456, 1941.

hematoma but also a valuable localizing sign. When the dilatation is contralateral to the hematoma the possibility exists of injury to the brain on the side of the dilated pupil.

Papilledema was present in 37 patients. As might be expected, these were all patients who had injuries of five days' duration or longer. I have not seen papilledema earlier than five days after injury.

Convulsions were seen in 29 cases. This is about the frequency generally reported for neoplasm of the cerebral hemisphere. When they occur unilaterally, convulsions are of great localizing value. When they occur after a cerebral injury, they strongly suggest a subdural hematoma, although they may be the result of localized cerebral contusion or edema.

Occasional bradycardia with a pulse rate below 60 was seen in 29 cases. It is seldom persistent but does tend to be recurrent. It is usually observed only by review of the hospital chart over a period of several days; consequently it is easily, and undoubtedly often, overlooked in patients who have been in the hospital only a short time before surgical intervention.

Examination of the spinal fluid was carried out in 85 cases. It was bloody in 14 (all within fourteen days after injury). In 55 patients (65 per cent) it was xanthochromic; in 16, clear. Aside from the early cases of patients with bloody spinal fluid, xanthochromia was found in 77 per cent of those examined. Clear spinal fluid does not rule out, or even make unlikely, the presence of a subdural hematoma, but xanthochromic spinal fluid usually indicates the diagnosis. However, if there is less than two weeks' time between the injury and the examination of the spinal fluid, the xanthochromia has to be disregarded, since it may be the result of subarachnoid hemorrhage suffered at the time of the injury. Observation of the data on the spinal fluid in a large number of cases of traumatic subarachnoid hemorrhage indicates that the spinal fluid will be clear within twelve to fourteen days after a cerebral injury unless there is a developing subdural hematoma.

Most important of all in the diagnosis of subdural hematoma is the alertness of the clinician. This alertness must include the realization not only that subdural hematoma is one of the most frequent surgical complications of head injury but also that any patient with the signs and symptoms of cerebral disease may have this condition. It is especially to be considered in "stroke" or "mental disease" or when the patient is in coma. The manifestations are protean, and there is no constant factor short of surgical exploration that will definitely establish the diagnosis.

The value of air studies is debatable. Davidoff and Dyke[20] were of the opinion that the encephalogram (spinal air) is of diagnostic importance. Others (e. g. Bull[21]) have emphasized the difficulties of diagnosis by means of air studies. The procedure of ventriculography has often led directly to the correct diagnosis, for when the surgeon made bur holes in the skull for the injection of air, the presence of the subdural hematoma was recognized. This occurred in 1 case in this series.

A 15 year old boy had been "knocked out" while boxing two months previously. A month later headaches, dizziness and vomiting began. Examination revealed ataxia, papilledema and right lateral rectus paresis. A suboccipital tumor was suspected because of the youth of the patient, the ataxia and the lack of lateralizing signs, and ventriculography was advised. When a bur hole was placed in each parietooccipital region, a liquid subdural hematoma of moderate size with well developed neomembranes was revealed on the left side. It was satisfactorily drained, and recovery was uneventful.

A case has already been described in which a small, anterior, organized subdural clot was not revealed by a parietal bur hole and, consequently, ventriculography was performed. In another case ventriculography was performed because of suspicion of a brain tumor. This yielded evidence of a right frontal space-occupying lesion. Craniotomy revealed a small, chronic, subdural hematoma over the right frontal lobe. This patient later recalled several minor head injuries in the preceding six months. In 3 other cases in which a tumor of the brain was suspected, encephalography was performed and revealed evidence of a space-occupying lesion. Craniotomy revealed the true nature of the lesion in 2 of these cases; in the third, the hematoma was drained in the usual way through a parietal bur hole.

TREATMENT

Trotter,[2] who was the first modern surgeon to interest himself in this condition, used trephine openings to evacuate the clots. This procedure seemed to be forgotten and osteoplastic craniotomy was generally employed until Fleming and Jones[22] and McKenzie[23] independently advised, in 1932, simple drainage through bur holes. This method was used in all but 8 cases in this series. In 4 of these cases, the method was used after the air studies to which reference has been made. One case already described was an instance of intracranial aneurysm. Here the small subdural hematoma was an incidental discovery. In another patient who failed to rally after drainage of a large, well-encapsulated clot, an osteoplastic craniotomy was carried out nine days later and the entire neomembrane meticulously removed. In spite of this, death occurred two days later. It was felt that this death was due to a failure of the brain to expand after removal of the hematoma. In another case osteoplastic craniotomy was necessary to remove a completely organized clot that was 2 cm. thick. Here the neomembranes were fused and the interior of the mass completely organized. This occurs rarely; such clots cannot of course be evacuated through bur holes. In the eighth case a parietal bur hole revealed the edge of a solid, unencapsulated clot in the inferior temporal region. This might have been evacuated through multiple bur holes but was removed through an osteoplastic craniotomy.

It is my practice to place these patients flat on their back with the head of the table elevated 10 to 15 degrees. The entire head is shaved and after surgical preparation is draped so as to expose practically the entire convexity of the skull. The operation can generally be done under local anesthesia, but if the patient is too restless or uncooperative for this, intravenous Sodium Pentothal or a preliminary dose of tribromoethanol may be used as a basal anesthetic.

Vertical incisions 4 cm. in length are made on each side of the scalp above the lobe of the ear and just above the insertion of the temporal muscles. Scalp clips or forceps on the galea control the hemorrhage of the scalp and small self-retaining retractors expose the bone. Bur holes are then made just above the insertion of the temporal muscle on each side. If the dura is discolored, the bur hole may be enlarged with the rongeur to an opening approximately 3 cm. in diameter. This gives more room for manipulations. Almost always the appearance of the dura reveals the underlying hematoma, if one is present. The underlying blood gives the dura a characteristic plum-colored appearance. A bur hole in this location will reveal the lesion in the vast majority of subdural hematomas. The lesion of necessity assumes the shape of a convex lens spread out over the surface of the hemisphere but thickest at the point of origin. If a hematoma is not disclosed on either side, additional bur holes may be made in the frontal and inferior temporal region, or ventriculography may be performed. It seems less time-consuming to depend on ventriculography rather than on multiple bur holes for the recognition of small or aberrantly located clots.

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[20] Dyke, C. G., and Davidoff, L. M.: Chronic Subdural Hematoma: A Roentgenographic and Pneumencephalographic Study, Bull. Neurol. Inst. New York 7: 112-147, 1938.

[21] Bull, J. W.: The Radiological Diagnosis of Chronic Subdural Hematoma, Proc. Roy. Soc. Med. 33: 203-224, 1940.

[22] Fleming, H. W., and Jones, O. W.: Chronic Subdural Haematoma, Surg., Gynec. & Obst. 54: 81-87, 1932.

[23] McKenzie, K. G.: A Surgical and Clinical Study of Nine Cases of Chronic Subdural Hematoma, Canad. M. A. J. 26: 534-544, 1932.

Even when a clot is disclosed on the side first explored, a bur hole should be made on the opposite side. Fourteen patients in this series had bilateral hematomas. When a hematoma is not found on the side first explored, then the other side must always be explored. Reference has already been made to the frequency of false localizing signs. In this series homolateral hemiparesis or pyramidal tract signs occurred in 17 per cent of the total number of cases with such neurologic signs. Failure to explore the second side, resulted in overlooking the hematoma in 1 case in this series. Necropsy two days later revealed the clot. This patient had a homolateral hemiparesis, and the case was one of those encountered early in my experience.

After the dura is opened evacuation of the hematoma is readily accomplished in most cases. With the head postured as described, most of the liquid hematomas will escape by gravity as soon as the dura is opened and the neomembrane of the hematoma is ruptured. If the clot is solid or semisolid, simple alternate irrigation with isotonic solution of sodium chloride and suction through a catheter passed beneath the dura will serve to break it up. Irrigation with isotonic solution of sodium chloride must be resorted to cautiously or not at all in acute cases because it induces swelling of the brain, which is often already present. In the chronic cases there is often difficulty in getting the brain to expand, and repeated irrigations appear to be of value in attaining that objective.

Occasionally the primary bur hole is at the edge of the clot, or difficulty is experienced in breaking up a relatively solid clot. Should this occur, additional bur holes may be placed over the center of the now localized clot or at its other edge, and through and through irrigation used. This was done in 2 cases. As already mentioned in 2 other cases, an osteoplastic craniotomy was used to evacuate an organized or solid clot.

In older persons, and especially in patients who come to the surgeon late, one occasionally finds that the cerebral hemisphere does not expand to fill the space formerly occupied by the clot. Trotter[2] noted this in the 2 fatalities that he reported. Both Grant[24] and Coleman[25] in 1935 called attention to the grave prognostic value of this observation. Cohen[26] reported a remarkable and much quoted case of this type in which the patient finally recovered after repeated aspirations of the subdural space. In my experience these cases all terminated fatally, in spite of drainage of the subdural space and the intravenous administration of hypertonic fluids in an attempt to swell the brain. Munro[5] quoted Henschen as recommending, in 1930, the administration of distilled water intravenously to swell the contracted brain in such cases.

In 1941, I reported a technic which has been regularly used since, when at the operating table the brain fails to expand to occupy the space previously occupied by the hematoma. The subdural space is filled with distilled water and a small soft rubber drainage tube is led out of the subdural space. The wound is then closed in layers tightly about the tube. A clamp is placed on the tube, the head is dressed and the patient is returned to bed. He is given 1,000 cc. of distilled water intravenously and another 1,000 cc. of isotonic solution of sodium chloride. The clamp is removed from the tube four to six hours later, and the tube is removed twenty-four hours later.

The danger of hemolysis after the intravenous administration of distilled water is obvious. The patients all exhibit mild hemoglobinuria for a day or two after the injection, but other ill effects have not been observed clinically. The use of this procedure is justified by a comparison of the previous poor result constantly encountered in this type of case with the successful result of this technic. It has now been used in 16 patients. All recovered with 1 exception; in this patient the technic was modified by the omission of the intravenous administration of distilled water; only isotonic solution of sodium chloride was given intravenously. This patient followed the usual course of such cases in past experience; he failed to rally, remained in coma and died forty-eight hours later. It is felt that this technic has now been used sufficiently often to demonstrate its value.

TABLE 4.—*Classification of Lesions and of Mortality of Patients*

	Hematomas		Cerebral Injury	
	Unilateral	Bilateral	Associated	None
Total	86	14	29	71
Recovered	80	10	10	60
Dead	26 (31%)	4 (29%)	19 (66%)	11 (15%)

A careful study of the results with different sizes of clot was made. Twenty-four clots were classified as small, 3 to 10 mm. thick (clots less than 3 mm. thick were not included in this series) and not over an estimated 30 cc. in volume. Forty-nine hematomas were considered moderate in size, 1 to 2 cm. thick or 30 to 60 cc. in volume. Twenty-seven patients had large hematomas, 2 cm. or more thick. There was no essential difference in the mortality in these groups. It is apparent, as previously stated, that the age of the patient and the stage of the clot (tables 1 and 2) are of importance in determining mortality. Table 4 shows that whether the clot is unilateral or bilateral is likewise unimportant, but that the factor of associated injury to the brain is most important of all. Associated injury to the brain here means gross cerebral contusion or laceration noted at operation or necropsy. Since exploration was limited in most cases to openings 1 to 3 cm. in diameter over each parietal region, it is likely that many surviving patients had injury to the brain that was not revealed at operation. Since associated injury to the brain is generally seen in acute cases, the reason for the high mortality in that group is

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24. Grant, F. C.: Chronic Subdural Hematoma, J. A. M. A. **105**: 845-849 (Sept. 14) 1935.

25. Coleman, C. C.: Chronic Subdural Hematoma, Am. J. Surg. **28**: 341-363, 1935.

26. Cohen, J.: Chronic Subdural Accumulations of Cerebrospinal Fluid After Cranial Trauma, Arch. Neurol. & Psychiat. **18**: 709-723 (Nov.) 1927.

obvious. It can be seen from tables 2 and 4 that the mortality for patients operated on a week or longer after the injury was only 14 per cent and that for patients without associated cerebral injury was only 15 per cent. The correlation is obvious.

SUMMARY

Subdural hematoma is, as a rule, primarily caused by injury to the head. Occasionally, such predisposing causes as tumor or a vascular anomaly are seen. The initial hemorrhage is subdural rather than intradural.

If the immediate hemorrhage is massive, there is usually a severe associated injury to the brain and corresponding severity of symptoms. The mortality is high in this group, and surgery is only rarely of value. If the patient survives the injury to the brain these hemorrhages are generally absorbed because of their communication with the subarachnoid space through tears in the arachnoid.

Moderate or small primary subdural hemorrhage gradually grows by osmosis of cerebrospinal fluid through the arachnoid. The hematomas gradually develop neomembranes, first on the dural side.

Diagnosis is based on a history of trauma (if available) and on the progressive nature (often with fluctuation) of the symptoms. Examination of the spinal fluid is extremely important. In the last analysis the diagnosis is established by exploratory bur holes.

Exploration should always be bilateral. Drainage is usually possible through a single bur hole; occasionally multiple bur holes or an osteoplastic flap is necessary. If during surgical intervention the brain does not expand to fill the space previously occupied by the clot, special measures such as the satisfactory procedure described herein to induce such expansion should be instituted.

ABSTRACT OF DISCUSSION

Dr. A. W. Adson, Rochester, Minn.: I should like to comment on some of the sequelae that develop in connection with subdural hematoma. Dr. Voris has explained that there are a number of patients who come with symptoms of increased intracranial pressure, with or without definite neurologic observations. The patient may show evidence of papilledema, and naturally one suspects the presence of a brain tumor. It is true that after one uncovers the finding at operation one will elicit some story that reveals a mild accident or head injury. I recall a young man who was blowing a large tuba horn and subsequently developed headache. He came to me several months later. Exploration for brain tumors have been done on a number of these patients. A subdural hematoma of some duration has a membrane both on the dural side and on the arachnoid side. As one palpates this membrane one becomes aware of the fact that one is dealing with a fluid mass. Some patients have a refilling of this cavity when an attempt has been made to wash out the blood clot by irrigation. I think that is due to the fact that the blood has not all become liquefied, and there remains a fairly good sized clot along the edge. Because this remains, more osmosis takes place and the recurrence might follow. Therefore it is rather important to make sure that this cavity has been thoroughly irrigated and that all the blood clots have been removed. If one has occasion to turn a bone flap it is wise to attempt to remove the membrane, because in so doing one undoubtedly relieves the restraining effect which sometimes prevents the refilling of the brain itself. I had a patient who apparently recovered from the washing out and draining of the subdural blood and returned later with a brain abscess and also an abscess in this cavity between the arachnoid and the dura. In the treatment of these cases my associates and I have used a solution of penicillin. We have attempted to drain the abscess and then fill the cavity. If, however, a brain abscess has developed in connection with the old subdural clot, one of course treats it in the usual manner. It is not uncommon, if there is occasion to open up one of these with a bone flap, to find a white, raised mass, due undoubtedly to the collection of fibrin white cells and other structures in the blood, so that again I want to emphasize that it is extremely important to clean out all the old blood or any white clot that may be present. If one has occasion to open the skull, the membrane as well as the old blood should be removed.

THE MANAGEMENT OF BACTERIAL INFECTIONS OF THE SKIN

DONALD M. PILLSBURY, M.D.
Philadelphia

Bacteria play roles of varying importance in a wide variety of diseases of the skin in man. The problem of the management of bacterial infections of the skin cannot be dismissed simply by a discussion of the diseases produced, the bacteria concerned and the advantages and disadvantages of the various antibacterial agents now available, especially since the latter still have certain definite shortcomings. The management of the more difficult and more resistant cutaneous infections can be improved by a better understanding of the manner in which the skin resists and harbors bacteria and of some of the mechanisms by which bacteria produce harmful effects.

The experience of the Army Medical Corps during recent years has furnished much information in regard to the potentialities of cutaneous diseases in the production of disability in young male adults. The amount of disability from this source was surprisingly large, and various types of pyoderma were responsible for much of it. The overall experience of the Army in this regard has recently been summarized by Pillsbury and Livingood.[1] During the year 1944, the number of hospital admissions because of diseases of the skin varied between 3,731 and 10,399 for each 100,000 troop strength in different theaters of operation. These figures do not include admissions to the sick list in field medical stations or dispensaries, in which the number of dermatologic patients varied between 15 and 60 per cent of the total.

In troops in the United States, the average number of hospital admissions by reason of a cutaneous disease was 42 per thousand troop strength per year, while in overseas stations the average number was almost twice as great, or 80 per thousand troop strength per year. Patients who were returned from an overseas station because of a cutaneous disease had a total hospital stay averaging 5.5 months, as long as that for many major battle casualties or serious medical diseases. In the Southwest Pacific area, between November 1944 and November 1945 approximately 15 per cent of all patients evacuated to the United States were sent home because of a cutaneous disease. In some months this was the most common reason for evacuation, with

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From the Department of Dermatology and Syphilology, University of Pennsylvania Medical School.

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Because of lack of space, this article is abbreviated in The Journal by omission of portions of the text and footnotes. The complete article will appear in the author's reprints.

[1] Pillsbury, D. M., and Livingood, C. S.: Experiences in Military Dermatology: Their Interpretation in Plans for Improved General Medical Care, Arch. Dermat. & Syph., to be published.

the exception of neuropsychiatric disorders; and in all months it was a more frequent cause of evacuation from that area than battle casualties.

Pillsbury and Livingood state that some form of pyoderma was regularly among the first five sources of disability from cutaneous disease, and that "cutaneous pyogenic infections are a far more important cause of chronic disabling eruptions than are superficial fungous infections."

Certain striking advances in the treatment of cutaneous infection have been made during recent years, but unfortunately a nonsensitizing and completely satisfactory method of treatment is not yet available. In particular, local penicillin therapy is producing contact dermatitis in an increasing percentage of patients, and further study of the mechanism of this reaction and of means to prevent it is needed.

CLASSIFICATION OF CUTANEOUS INFECTIONS

In the selection of the proper type of treatment, division of cutaneous infections into certain broad classifications is useful. Some infections are acute and primary, arising rapidly in skin which was previously normal. Other infections are acute and secondary, arising in skin which has had its integrity disturbed by some previous disease or injury. Other infections are chronic and recurrent, at times presenting great difficulties in cure. The following practical classification has proved useful.[2] In it, certain complex descriptive dermatologic terms have been omitted because they are more confusing than informative.

Primary Acute Superficial Infections.—Primary acute superficial infections include impetigo of various types, acute infectious eczematoid dermatitis and superficial acute ecthyma. Hemolytic Staphylococcus aureus and/or streptococci (ordinarily Lancefield group A) are concerned in the causation of such eruptions. The character of the lesions varies considerably, depending on the virulence of the bacteria concerned, the defensive reaction of the skin to infection and the site of involvement, whether on smooth skin, about hairs or in intertriginous areas. Factors such as perspiration (for instance, in tropical impetigo), functional or organic disturbances of the circulation and seborrheic "diathesis" greatly influence the character and course of the infection.

Acute Superficial Infections Occurring as a Complication of Some Preexistent Dermatosis.—Bacterial infection may appear as a complication of a wide variety of dermatoses, but in the following diseases it is most frequently observed: dermatitis and eczema, superficial fungous infections, seborrheic dermatitis, parasitic diseases and neurodermatitis. Bacteria rapidly gain a foothold in skin which is already diseased, and the problem of their removal is complicated by the fact that such skin reacts more frequently to treatment than does skin which was previously normal. Concomitant treatment of an underlying dermatosis, for instance, scabies or seborrheic dermatitis, may be necessary before the bacterial infection can be controlled completely. It is of the greatest importance that secondary bacterial infection of any eruption be recognized and controlled as promptly as possible, if chronicity of the infection is to be prevented.

Chronic Eczematous Lesions in Which Pyogenic Infection is Playing a Variable but Significant Role.—The chronic eczematous lesions in which pyogenic infection is playing a variable but significant role have certain characteristics in common, but may vary considerably in appearance and localization. The features in common are (1) eczematous appearance, often with little evidence that bacterial infection is present; (2) sharp circumscription of each particular individual lesion, usually; (3) chronicity; (4) occasional acute pyogenic flare-ups, of variable intensity; (5) a definite tendency of the patient to be hypersensitive to various bacterial derivatives, particularly staphylococcus toxoid, and (6) liability to explosive dissemination of the process to other parts of the cutaneous surface, sometimes with an accompanying systemic reaction. Lesions of this group of eczematous dermatoses are most frequently observed on the lower legs, the forearms and the hands. They are variously diagnosed, with reason, as nummular eczema (an unsatisfactory descriptive term), seborrheic dermatitis, chronic eczematoid dermatitis, chronic contact or food dermatitis and neurodermatitis.

Chronic Deep Ulcers.—While bacterial infection is often chiefly responsible for chronic deep ulcers, thorough general medical study of the patient is absolutely essential to the intelligent management of any chronic ulcer. In addition, the bacteriologic study of the lesion should be especially thorough, with culture by both aerobic and anaerobic methods. Such patients should never be treated with penicillin by injection until the result of the serologic test for syphilis is known, or, at least, blood has been taken for it.

Acute and Chronic Infections of the Skin Appendages.—Acute and chronic infections of the pilosebaceous apparatus and the sweat glands (folliculitis, furunculosis, carbunculosis, hidradenitis) are often extremely difficult to cure, and a combination of medical, surgical and radiotherapeutic methods may be necessary. Relapses are commonly seen, and thorough study to determine what factors other than infection are operative is often necessary.

Other infections of the skin and subcutaneous tissue include cellulitis, both acute and recurrent, erysipelas, erysipeloid of Rosenbach, venereal diseases and cutaneous diphtheria. Discussion of the management of these infections will not be attempted in this paper.

BACTERIOLOGIC AND THEORETIC CONSIDERATIONS

Certain established facts and hypotheses in regard to the bacterial flora of the normal and diseased skin are of considerable practical value in the management of acute and chronic cutaneous infections. The important general principles are:

1. *The Number of Bacteria on Normal Skin.*—The human skin is the habitat of an enormous number of bacteria, which vary to a considerable degree in kind and number in different persons, in various parts of the body and under different conditions of environment, hygiene, apparel, perspiration and contaminating bacterial contact.

A method for determining the number of bacteria on the hands and forearms has been devised by Price,[3] which has proved useful in determining the effects of mechanical "degerming" of the skin and of various antiseptics. This method has been employed, with some modifications, in several studies by other workers (Pohle,[4] Pillsbury,[5] Cromwell,[6] Shaffer[7] and their associates).

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[2] Pillsbury, D. M.: Sulfonamides in Dermatology, Brit. J. Dermat. 56: 68, 1944.

[3] Price, P. B.: The Bacteriology of the Normal Skin: A New Quantitative Test Applied to a Study of the Bacterial Flora and the Disinfectant Action of Mechanical Cleansing, J. Infect. Dis. 63: 301, 1938.

The number of bacteria removable from the hands and forearms of normal persons by a standard series of scrubs of a total duration of fifteen minutes has varied between 4 million and 40 million in my experiments.[5] The number of bacteria shows great variation from person to person and is influenced greatly by hygiene, particularly of the nails, by the wearing of rubber[3] or other gloves which produce increased warmth and perspiration, by contact with infected patients and by covering the skin with a relatively impermeable film, such as calcium soap.[8]

2. *Types of Bacteria on Normal Skin.*—The types of bacteria recovered from normal skin show considerable variation. The concept of Price that cutaneous bacteria may be divided into a transient and resident flora is of great practical value, although the division is sometimes not clear-cut. The transient bacteria are easily removed from the skin by a variety of means, but the resident bacteria are difficult to kill or remove. In particular, it has been demonstrated that pathogenic bacteria and fungi may suddenly become part of the resident flora and may persist for a long time.

Beta hemolytic streptococci, particularly those of the Lancefield[11] group A, are infrequently isolable from the normal human skin unless the subject is suffering from an infection elsewhere. Staphylococci are, however, frequently recovered, though coagulase-positive hemolytic Staph. aureus is found with far greater frequency on the frankly infected or eczematous skin than on normal skin.

3. *Cutaneous Self-Disinfection.*—The normal skin has an enormous power for self disinfection, the mechanism of which is not yet clearly understood. Burtenshaw[13] has recently reviewed this subject. He concluded that while such factors as desquamation, desiccation, acidity and sunlight contribute to the self-sterilizing powers of the skin, they do not adequately explain its capacity in this regard. In his opinion, it is probable that the whole range of fatty acids of the acetic series, from formic to stearic and oleic, and a few other organic acids are important agents in killing bacteria, fungi and viruses on the surface of the skin.

4. *The Factor X in Cutaneous Infection.*—It has been established by experiments on the human skin that it is often difficult to produce infection by the introduction of bacteria or infectious material derived from a patient suffering from a cutaneous infection.[14] This difficulty has been well demonstrated in impetigo, which is presumed to be almost entirely due to the action of bacteria and to be highly contagious. The most recent experimental studies in this regard have been carried out by Bigger and Hodgson[15] and by Sheehan and Fergusson.[16] The former attempted to produce impetigo of the skin of volunteer subjects and of the unaffected skin of patients with impetigo by various means, without success. Sheehan and Fergusson were slightly more successful in producing impetigo experimentally.

It is difficult to escape the conclusion that, as Bigger and Hodgson have pointed out, there is a factor X in the development of impetigo. The disease varies in contagiousness from the persistent epidemics which were formerly encountered in nurseries for the newborn to the relative infrequency with which impetigo is encountered among adults, such as physicians and nurses, who are repeatedly exposed to the disease.

5. *Superficial Bacterial Infection as a Sensitizing Agent.*—The potentialities of superficial bacterial infection as a sensitizer of the skin are manifold. The bacteria of the skin in patients with chronic eczema are almost always a significant component in the variable etiologic backgrounds of such conditions. Stokes[18] has long been interested in this problem and has written a number of papers dealing with different aspects of the "infection-allergic complex." He and others have demonstrated that in the course of almost any chronic eczematous disease, ingestant, inhalant, contactant, infective, general medical and psychosomatic influences are frequently interwoven and variously predominant. With the employment of this useful concept, it is at once apparent why any one of these various methods of approach to the problem of chronic eczematous eruptions is useful and often successful, at least temporarily.

It is of interest to examine some of the evidence concerning the mechanisms by which bacteria may contribute to exacerbation or persistence of eczematous disease. As has been stated previously, skin that is chronically inflamed almost inevitably receives some new strains of bacteria into residence. At times these may quickly produce acute, severe infections. Examples of this include the explosive impetigos and infectious eczematoid dermatitis occasionally seen in patients with atopic dermatitis. Another example is the persistent furunculosis which sometimes follows dermatitis or scabies. The furunculosis often persists long after the original dermatosis has disappeared.

On the other hand, bacteria which become resident in inflamed skin frequently do not produce overt evidences of infection but may impede the progress of the skin to normality by acting as potent skin sensitizers. One strong clinical evidence of this is the frequency with which patients react to injections of staphylococcus toxoid or of a preparation of staphylococcus toxoid and bacterial antigen. Evidence of this

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4. Pohle, W. D., and Stuart, L. S.: The Germicidal Action of Cleansing Agents: A Study of a Modification of Price's Procedure, J. Infect. Dis. **67**: 275, 1940.

5. Pillsbury, D. M.; Livingood, C. S., and Nichols, A. C.: Bacterial Flora of the Normal Human Skin: Report on the Effects of Various Ointments and Solutions, with Comments on the Clinical Significance of the Study, Arch. Dermat. & Syph. **45**: 61 (Jan.) 1942.

6. Cromwell, H. W., and Leffler, R.: Evaluation of "Skin Degerming" Agents by a Modification of the Price Method, J. Bact. **43**: 51, 1942.

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8. Jones, K. K., and Lorenz, M.: Relation of Calcium Soaps to Staphylococcal Infections of the Skin, J. Invest. Dermat. **4**: 69, 1941.

11. Lancefield, R. C.: Specific Relationship of Cell Composition to Biological Activity of Hemolytic Streptococci, in Harvey Lectures, 1940-1941, Lancaster, Pa., Science Press Printing Company, 1941, pp. 251-290.

13. Burtenshaw, J. M. L.: Self-Disinfection of the Skin: A Short Review and Some Original Observations, Brit. M. Bull. **3**: 161, 1945.

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16. Sheehan, H. L., and Fergusson, A. G.: Impetigo: Aetiology and Treatment, Lancet **1**: 547, 1943.

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sensitivity may be seen in a decided local reaction at the site of intradermal injection of a small amount of toxoid, or by an exacerbation of the dermatitis after such an injection or even by the precipitation of a generalized id reaction. The latter reaction may sometimes be accompanied by evidence of systemic reaction. Similar reactions may be elicited at times by the injection of simple vaccines of staphylococci or streptococci isolated from the skin of the patient, though not as frequently as with a stock staphylococcus toxoid, in my experience.

While one must be cautious in interpreting such sensitivity as having been directly induced by the growth of bacteria in an area of damaged skin, there is some experimental evidence that this is actually the case. Hecht and others [19] have shown that under certain conditions, persons may become sensitized to the slightly denatured substances of their own organs, and that organ-specific antibodies may then be produced. The antibody may, in turn, damage the particular organ in vivo and in situ and may thus produce clinical disease. These investigators injected sections of rabbit skin intramuscularly at one site and staphylococcus toxin intradermally at other sites. The injected rabbits developed percipitins against soluble rabbit skin antigen. However, in animals injected with skin alone or toxin alone and in untreated controls anti-skin precipitins were not observed.

THE CLINICAL MANAGEMENT OF PYODERMAS

One principal aim in the treatment of any bacterial infection is, obviously, to eliminate the offending bacteria as rapidly as possible. It is equally obvious, however, that the treatment must be of an order which will not produce a reaction which may be more severe or persistent than the original disease. In the treatment of acute superficial infections such as impetigo, ecthyma and infectious eczematoid dermatitis, it is usually possible to cure the disease within a period of a week. Until recently it was believed that topical penicillin therapy was the initial treatment of choice, but the disturbing appearance of an increasing incidence of sensitivity reactions in patients so treated is producing a considerable change in this view. It is probable that further experience will indicate that topical penicillin therapy is much less safe, and therefore less useful, than was previously believed.

In the following paragraphs, the various types of treatment of bacterial infections of the skin in common use at the present time will be outlined, together with comments on their usefulness. Evaluation of certain older methods of treatment is difficult, because adequate data, including follow-up results, have never been collected in regard to many of them, to my knowledge.

Topical Penicillin Therapy.—A large number of reports on the topical penicillin method of treatment have appeared since it came into general use in the armed forces in 1944. Two particularly outstanding studies have been made, one by Davies and his associates [23] under the auspices of the Royal Army Medical Corps and the other by Hopkins and Lawrence [24] at the instance of the Surgeon General, United States Army. Davies treated 182 patients affected with various types of superficial pyoderma with penicillin applied topically. Careful bacteriologic studies were performed throughout the study with, of particular interest, grouping of the streptococci recovered according to the Lancefield classification. The distribution of patients treated was as follows: annular impetigo (staphylococcic) 17, impetigo (streptococcic) 12, ecthyma 15, furunculosis 6, impetiginous seborrheic dermatitis 132.[25]

The penicillin in this study was ordinarily applied by means of an aqueous solution containing 1,000 units per cubic centimeter which was sprayed on the skin at intervals of four hours. In both staphylococcic and streptococcic impetigo, penicillin spray produced more rapid healing than a control treatment, by an average of 4.6 days. It was concluded that it was a superior method of treatment in such cases. The results in ecthyma were not considered superior to other methods of treatment. In impetiginous seborrheic dermatitis, penicillin spray was occasionally, but not always, more effective than other methods.

It is noteworthy that the Davies workers were usually able to recover the original bacteria from the lesions after penicillin therapy, and this has been confirmed by the study of Hopkins and Lawrence. Davies and his associates encountered no instances of reactions attributable to a sensitivity to penicillin in their cases. This is at variance with recent other studies, and with my own experience in studies made with Templeton,[26] Wrong,[27] Gottschalk [28] and other associates.

Hopkins and Lawrence [24] treated a series of 618 soldiers suffering from various types of pyogenic infections by local applications of penicillin incorporated in three types of bases, in strengths varying from 100 to 10,000 units per gram. The bases used were an oil-in-water emulsion (U. S. Army supply item no. 1173800), a bentonite gel, and a glycol-carbowax mixture. Apparently these bases were equally satisfactory. A strength of 100 units per gram was inferior to a strength of 500 units per gram. Occasionally, higher concentrations of penicillin were necessary, but these concentrations produced an increased incidence of sensitization to penicillin.

Hopkins and Lawrence concluded that topical penicillin therapy is rapidly effective in the majority of cases of impetigo, ecthyma and the pyogenic complications of dermatophytosis. In the latter condition, the incidence of control of the infection was higher, and the time required to attain it less, than in lesions which were treated with 5 per cent sulfathiazole, 10 per cent tannic acid, 20 per cent zinc peroxide or 0.5 per cent benzolkonium chloride solution. It is noteworthy also, in passing, that rest and protection of the inflamed skin by a simple dressing were as effective as penicillin therapy in a small series of cases of mildly infected dermatophytosis of the feet.

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[19] Hecht, R.; Sulzberger, M. B., and Weil, H.: *Production of Antibodies to Skin by Means of Synergistic Action of Homologous Skin Antigen and Staphylococcus Toxin,* J. Exper. Med. **78**: 59, 1943.

[23] Davies, J. A. T.; Dixon, K., and Stuart-Harris, C. H.: Therapeutic Trial of Penicillin in Infective Conditions of the Skin, Quart. J. Med. **14**: 183 (Oct.) 1945.

[24] Hopkins, J. G., and Lawrence, H.: Penicillin Therapy in Pyogenic Dermatoses, New York State J. Med., to be published.

[25] The concept of seborrheic dermatitis as employed in this and many other papers appearing in the British medical literature is considerably more elastic than the usual American concept of this disease. Many of the cases reported would be regarded by American observers as instances of superficially infected intertrigo, patchy eczematoid dermatitis, neurodermatitis or nummular eczema.

[26] Templeton, H. J.; Lunsford, C. J., and Allington, H. V.: Reactions to Penicillin, Arch. Dermat. & Syph., to be published.

[27] Wrong, N. M.: Penicillin in Pyoderma, Canad. M. A. J., to be published.

[28] Gottschalk, H. R., and Weiss, R. S.: Epidermal Sensitivity to Penicillin, Arch. Dermat. & Syph. **53**: 365 (April) 1946.

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Templeton, Lunsford and Allington [26] have cited a long list of published reports of local reactions to penicillin, which have occurred in physicians and chemists handling the drug, after the application of a wet dressing of penicillin and after the use of penicillin lozenges and troches and penicillin eye drops. I have observed instances of all these reactions, particularly of the sensitivity which develops in physicians, nurses and corpsmen who are frequently exposed to penicillin.

Fortunately, the local reactions to penicillin are usually mild and subside promptly. In addition, it is possible for some patients to continue the use of penicillin locally with disappearance of the sensitivity, a process which has a well known corollary in the "hardening" of the skin which occurs in workers exposed continuously to occupational contactants. On the other hand, the swelling, redness and vesiculation may at times be decided and may require prompt discontinuance of the penicillin therapy. Two extremely important considerations, both of which have had a disappointing corollary in the case of local sulfonamide therapy are, first, it is probable that as more persons are repeatedly exposed to contact with penicillin by application or injection, the incidence of severe reactions will increase; second, it is probable that sensitivity of the epiderm induced by local application will be succeeded in some patients by induced sensitivity of the dermal and vascular structures, with the result that reactions will follow the subsequent parenteral administration of penicillin.

Sulfonamide Therapy in Superficial Pyoderma.—Local sulfonamide therapy of superficial infections of the skin is rarely justifiable; some observers believe that it has no place whatever in modern therapy. In the clinic with which I am associated, the initial results with local sulfathiazole therapy were excellent, and almost no untoward reactions of any severity were seen in the first 200 patients treated.[29] Many observers, including myself,[30] then began to perceive reactions of severity and chronicity if the sulfonamide preparation had been used for prolonged periods, particularly in cases of eczematous pyoderma. During the war, 5 per cent sulfadiazine in an emulsion base was extensively used on soldiers for various superficial infections. If used properly for acute primary infections for periods not longer than five days it did relatively little harm, but it was all too frequently applied for prolonged periods without medical control and with disabling results for the patient. It is impossible to restrict the use of an easily available ointment preparation sufficiently to prevent its misuse by the patient or by others.

Local Hygiene.—The cleaning up and gentle débridement of superficial cutaneous infections is an absolute *sine qua non* to the maximum effectiveness of any method of treatment. It is as important to open a pustule or remove epithelial debris gently as it is to drain a deep abscess, in terms of prompt cure of the infection. Various solutions are fairly effective in promoting this cleaning up process, not through any particular antibacterial power, but because they soften debris and allow the immune response of the skin and the action of other treatment to proceed effectively. Isotonic solution of sodium chloride, boric acid solution and 0.01 per cent potassium permanganate solution are all useful. In recent laboratory experiments, none of these substances had any rapid adverse effect on penicillin solution in the strengths ordinarily employed.

Rest and exposure of the affected part to air are also important features of treatment. It is difficult to cure a secondary infection of the foot, however mild, when the patient encases his foot in a shoe and subjects the foot to trauma for twelve to eighteen hours a day.

Penicillin by Injection.—In recent months, it has been my practice to employ penicillin by injection in superficial pyodermas, whenever this procedure is possible. If the infection is acute and caused by penicillin-sensitive bacteria, such therapy is almost always rapidly curative. This treatment has serious disadvantages by reason of the expense involved, but this is not a medical reason. If penicillin in water or isotonic solution of sodium chloride is employed, treatment is inconvenient, but treatment may be carried out in the office with penicillin in peanut oil and beeswax solution. Two or three daily injections of 150 thousand to 300 thousand units each are ordinarily sufficient. Whether or not the incidence of severe reactions to penicillin administered parenterally will prove a significant drawback to such treatment remains to be seen, but at present it is my experience that the parenteral injection of penicillin is equal or superior to topical penicillin therapy in the treatment of superficial cutaneous infections and is productive of fewer reactions.

Various Other Methods of Treatment.—Ammoniated Mercury: The use of an ointment which contains ammoniated mercury in a strength above 5 per cent is rarely necessary. In many patients, particularly if there is much oozing from the lesions or if the skin is oily, a suspension of ammoniated mercury in a "shake" lotion, such as calamine, is superior to the ointment.

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[29] Pillsbury, D. M.; Wammock, V. S., and Nichols, A. C.: The Local Treatment of Pyogenic Cutaneous *Infections* with Sulfathiazole in an Emulsion Base, Am. J. M. Sc. **202:** 808, 1941.

[30] Livingood, C. S., and Pillsbury, D. M.: Sulfathiazole in Eczematous Pyoderma: Sensitization Reaction to Successive Local and Oral Therapy, J. A. M. A. **121:** 406 (Feb. 6) 1943.

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Acriflavine: Acriflavine is expensive and messy but often extremely effective. It is best applied in compresses of 0.01 per cent strength. Its use in conjunction with sulfonamides may produce an increased tendency to sensitivity to sunlight.[32]

Castellani's Carbol Fuchsin Paint: Castellani's carbol fuchsin paint is often the single most effective local application in chronic low grade eczematous infections of the skin. It is disfiguring in color but not as messy as gentian violet medicinal. It is decidedly antipruritic, and local irritation from it is not encountered as frequently as might be expected from the strength of phenol and resorcinol in the compound.

Silver Nitrate: Silver nitrate may be used in compresses of 0.1 per cent strength or painted on in 1 per cent aqueous solution. It is an extremely useful drug in superficial infections and almost reactionless, unless excessive strengths are used. It is important to apply the solution as directly as possible to the site of infection, not merely on top of crusts and epithelial debris.

Quinolor Compound Ointment: Quinolor Compound Ointment[33] is particularly useful in chronic follicular infections, though often effective in other pyodermas. It occasionally produces some burning when applied, though severe local reactions to it are uncommon.

Benzalkonium Chloride Solution (0.5 per cent): Benzalkonium chloride solution (0.5 per cent) is a soothing, apparently reactionless, compound which has had extensive use by Hopkins and Lawrence. Ordinarily, however, it is not sufficiently antibacterial alone for effective use against acute infections.

Other preparations are recommended, but those already mentioned have been the most useful in my experience. It cannot be emphasized too strongly that the use of chemical irritants or of highly sensitizing compounds on infected, inflamed skin will result in severe reactions, and in many instances may lead to prolongation of partial disability over a period of weeks or months. Instances of this are regularly seen. In particular, tincture of iodine should never be used; it is a cauterant and skin-sensitizer, and too frequently adds to the burden under which the diseased skin is already laboring.

SUGGESTED TREATMENT REGIMENS[34]

Suggested Treatment Against Impetigo, Ecthyma, Acute Infectious Eczematoid Dermatitis, and Acute Pustular Folliculitis.—1. Thorough gentle cleaning of the involved site by means of soap and water, compresses of isotonic solution of sodium chloride or 0.1 per cent potassium permanganate solution for twenty minutes two to six times a day, gentle mechanical opening of all pustules and careful removal of softened cutaneous debris are of importance.

2. Penicillin therapy is recommended. It is my opinion that penicillin by injection, especially in vehicles designed to slow the absorption and maintain an adequate serum concentration of the drug for twelve to twenty-four hours, is probably preferable to local penicillin therapy. The dose for adults should be of the order employed for any acute bacterial infection. If the penicillin oil and beeswax mixture is used, a single injection of 1 cc. which contains 300,000 units of penicillin once a day is ordinarily adequate. However, in simple impetigo, for instance, local penicillin therapy is much simpler and less expensive. The total period of application should not be longer than five days, even at the risk of relapse. No more ointment than can be used efficiently during this time should be prescribed. A concentration of 500 units per cubic centimeter or gram is best, though in all-grease vehicles, a higher concentration may be necessary to allow sufficient diffusion of penicillin to the site of infection. The penicillin may be applied four or five times a day in an aqueous spray or compress, in various types of emulsion bases (including "brushless shaves") and in all-grease bases. Theoretically a solution or emulsion base should be most effective, though clinical studies do not confirm this entirely. Emulsion bases allow reduction in the penicillin content on standing, but are sufficiently potent for at least a week at room temperature. All-grease bases show no significant deterioration on standing. An adequate dressing should be used on ecthyma lesions.

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2. Bacterial cultures and determination of the sensitivity to penicillin of the bacteria recovered should be performed whenever possible.

3. Sulfonamides should not be applied locally.

4. Undue activity and trauma of the affected part by shoes or clothing should be avoided so far as possible.

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to some other method of local nonirritating antiseptic therapy.

7. If there is an underlying dermatophytic infection, the use of a preparation containing undecylenic acid is recommended. Irritating fungicides are harmful.

Suggested Treatment for Chronic Infections, Including Those of the Eczematous Type.—1. Penicillin should not be used locally, except possibly in noneczematous chronic follicular infections and ulcers. Parenteral injection is much the preferable method of administration.

2. Sulfonamides should never be applied locally.

3. Bacterial culture, together with determination of the sensitivity to penicillin of the bacteria recovered, is extremely useful.

4. The patient should be studied completely, and a careful history should be taken to determine the factors in regard to contactants, ingestants, trauma and general medical consideration involved.

5. Initial local treatment with bland preparations as for a dermatitis is almost always best.

6. In some instances, the administration of sulfonamides, with small initial doses, is effective.

7. Such preparations as Castellani's carbol fuchsin paint, 2 per cent silver nitrate or, if there is an underlying seborrheic dermatitis, a sulfur-salicylic acid-tar preparation are variously useful.

8. Roentgen ray therapy is sometimes helpful, but one is impressed with its gross misuse in the treatment of many dermatologic patients. It should be infrequently necessary and carefully administered, and it should not be used as a substitute for careful study of the several possible etiologic backgrounds.

SUMMARY

1. Bacteria are responsible, in greater or less degree, for a considerable proportion of the disease affecting the human skin. The disability produced by bacteria is greater than the disability produced by fungous infections. Hemolytic Staphylococcus aureus and beta hemolytic streptococci, alone or in combination, are the chief offenders.

2. The changes which are produced by bacteria in the skin may be acute and fulminating or extremely chronic. Bacteria, acting through their toxic or allergenic effects, are responsible for chronicity in many cutaneous lesions which do not appear primarily infectious.

3. The normal human skin harbors an enormous number of bacteria which are ordinarily harmless. These may be divided roughly into a resident and a transient population (Price). The resident population usually remains fairly stable, both quantitatively and qualitatively, in any person. However, some influences, particularly heat and moisture, cause considerable changes in the number of bacteria on the normal skin. Pathogenic bacteria may sometimes suddenly become members of the resident flora of the skin and may then be extremely persistent and difficult to dislodge.

4. Several factors apparently play a role in the remarkable protection which the normal human skin affords against bacterial invasion. However, these factors are by no means well understood, and further basic study of them will increase the effectiveness of methods of aiding the skin to resist damage from bacteria.

5. When the integrity of the human skin is disturbed, harmful bacteria readily become well established residents of the diseased area. In the management of cutaneous diseases which are characterized by inflammatory reaction, it is important to avoid the use of measures which may further irritate the skin and to recognize and treat bacterial invasion promptly.

6. The usefulness of topical penicillin therapy in the treatment of superficial infections of the skin is seriously jeopardized by an increased incidence of contact sensitivity which is being encountered. The present incidence of sensitivity reactions is apparently over 15 per cent, and this percentage may increase as more persons are exposed to the drug.

7. Superficial acute infections such as impetigo and ecthyma ordinarily respond promptly to local penicillin therapy. The responsible bacteria are not always removed rapidly, however, and continued care and observation for several days after apparent cure is necessary to prevent relapses.

8. The response of chronic cutaneous infections, or of chronic eczematous lesions in which there is an element of infection, to penicillin therapy is only moderately good.

9. Local application of sulfonamides to sites of superficial infection has little or no place in present day therapy. While the development of sensitivity in a significant proportion of patients can be prevented by using sulfonamide ointment only for primary acute superficial infections and for periods of not longer than five days, experience has shown that it is impossible to insure observation of these precautions in practice. Sulfonamides by mouth still retain a definite place in the management of certain acute and chronic infections of the skin and can ordinarily be given without severe reactions, provided that reasonable precautions are exercised.

10. While definite improvement in the methods of dealing with superficial bacterial infections of the skin has been achieved, these methods are susceptible of further improvement. In particular, the development of penicillin or sulfonamide compounds with a decreased capacity for sensitizing the skin and other tissues is needed. There is also need for nonsensitizing chemical antiseptics which have a greater antibacterial power in vivo than those now available.

Carcinoma of Lung.—While published statistics vary, the majority indicate that about 50 per cent of primary carcinomas involve either the upper middle or the lower lobe of the lung. Further, the cases that can be treated surgically usually are included in this group, since carcinoma of a main bronchus rarely is operable unless discovered in its incipience. Since from 30 to 40 per cent of cases occur beyond the range of vision of the bronchologist, these offer a direct challenge diagnostically, for they are the cases that more often must be diagnosed either by exploratory thoracotomy, aspiration biopsy or other means and frequently are not brought to a final conclusion diagnostically until other plans of diagnosis and therapy are tried and valuable time is lost.—Clerf, Louis H., and Herbut, Peter A.: Diagnosis of Bronchogenic Carcinoma by Examination of Bronchial Secretions, *Ann. Otol., Rhin. & Laryng.* **55:**646 (Sept.) 1946.

Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association
and Hygeia, the Health Magazine
Chicago

(Continued from page 638)

(NOTE.—*Following are the second and third chapters of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of THE JOURNAL. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in THE JOURNAL. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—ED.)

CHAPTER 2. *The Organization of the American Medical Association*

On May 5, 1847 the delegates to the National Medical Convention met in the hall of the Academy of Natural Sciences in Philadelphia. Dr. Isaac Hays, chairman of the Committee on Arrangements from the Philadelphia delegation, welcomed the delegates to the city. He told them of the gratification afforded the Philadelphia physicians in receiving the members of the convention as their guests. He then proposed the name of Dr. Jonathan Knight of Connecticut as chairman. A credentials committee was established and also a nominating committee, which was instructed to nominate four vice presidents and three secretaries. Permanent officers of the convention included as president Dr. Jonathan Knight of Connecticut; vice presidents, Dr. Alexander H. Stevens of New York, Dr. George B. Wood of Pennsylvania, Dr. A. H. Buchanan of Tennessee and Dr. John Harrison of Louisiana. The three secretaries were Dr. Richard D. Arnold of Georgia, Dr. Alfred Stillé of Pennsylvania and Dr. F. Campbell Stewart of New York.

A number of resolutions were introduced asking for places in the convention for any members of the previous convention who had not been elected to the present one, "any medical gentlemen present from states not represented" and any ex-officers of medicine from various medical schools or any professors from abroad who happened to be in Philadelphia. All these resolutions were most properly defeated. Similar technics for "stacking" conventions are examples of the notorious evils in democratic procedure.

Then Dr. Hays called for the reading of the report of the committee appointed in 1846. This report was read and ordered to be printed, as were also the reports on registration of births, marriages and deaths.

At the evening session of the same day a report was read on the requirements of the degree of M.D., another report on preliminary education and a portion of the report of the committee to prepare a code of medical ethics. Still later came the report from the committee on nomenclature of diseases and then the adjournment.

On the following day, after the convention assembled, Dr. N. S. Davis offered a resolution for committees to record the indigenous medical botany of our country.

A controversy developed on the resolution which dealt with the union of teaching and licensing. Here majority and minority reports were presented. Then came reading of the resolutions previously introduced, with the adoption of the resolution on preliminary education. Invitations were presented to the convention for its 1848 meeting.

Just before adjournment of the morning session, the members having perhaps become somewhat prolix, Dr. Joel Hopkins of Maryland offered a resolution to the effect that "no gentleman shall be permitted to speak more than twice on the same proposition nor occupy more than fifteen minutes for speaking, without leave of the convention." This resolution was amended by changing fifteen minutes to ten minutes and then adopted.

PRELIMINARY EDUCATION

Worthy of special note was the resolution on preliminary education of the young man in the field of medicine. The resolution read as follows:

> *Resolved,* That this Convention earnestly recommends to the members of the medical profession throughout the United States, to satisfy themselves, either by personal inquiry or written certificate of competent persons, before receiving young men into their offices as students, that they are of good moral character and that they have acquired a good English education, a knowledge of natural philosophy and the elementary mathematical sciences, including geometry and algebra, and such an acquaintance, at least, with the Latin and Greek languages as will enable them to appreciate the technical language of medicine, and read and write prescriptions.
>
> *Resolved,* That this Convention also recommends to the members of the medical profession of the United States, when they have satisfied themselves that a young man possesses the qualifications specified in the preceding resolution, to give him a written certificate stating that fact, and recording also the date of his admission as a medical student, to be carried with him as a warrant for his reception into the medical college in which he may intend to pursue his studies.
>
> *Resolved,* That all the medical colleges in the United States be, and they are hereby recommended and requested to require such a certificate of every student of medicine applying for matriculation; and, when publishing their annual lists of graduates, to accompany the name of the graduate with the name and residence of his preceptor, the name of the latter being clearly and distinctly presented as certifying to the qualification of preliminary education.

Some of the members in the convention opposed this resolution, urging that it would prevent many young men of limited means from entering the medical profession whose natural endowments would carry them to the highest rank, notwithstanding their inadequate preliminary preparation. The argument was answered by the statement that "Our country provides school houses and almost unlimited facilities for acquiring a knowledge of at least the ordinary branches of learning." N. S. Davis said that "young men who had not mental energy and perseverence enough to comply with the standard proposed in the resolutions, certainly had not enough to enable them to do justice to a profession as extensive, intricate and arduous as ours."

These resolutions were adopted by nearly a unanimous vote and were then reaffirmed by almost every meeting of the Association that followed. They have, in fact, constituted a guiding principle in the field of medical education in this country for a hundred years. Subsequent resolutions urged lengthening of the curriculum from four months to six months, a minimum of three entire years to be devoted to the study of medicine, a minimum age of 21 for entering the practice of medicine, at least three months devoted to dissections, at least one session of hospital practice (which, to us, would mean an internship), and a method of making certain that students actually attended lectures.

CHAPTER 3. *A Permanent National Association*

Most important was the activity of the convention which resulted in the organization of a permanent national association. The committee reported in full a constitution designed to effect such a national organization. First came resolutions from the inspired physicians who thought that they had evolved better names than the one which was ultimately chosen. Thus one name considered was "The Conventional Association of the United States," another "The Medical Association of the United States of North America." Both these proposals were lost, after which the constitution developed by the committee was offered to the convention and accepted. It included the clause "This institution shall be known and distinguished by the name and title of 'The American Medical Association.' "

This constitution wisely proposed the principle of representation by making the acting members of the Association consist of delegates from medical societies and institutions in accordance with a fixed numerical ratio.

The preamble attached to the constitution declared the purpose of the organization to be "for cultivating and advancing medical knowledge; for elevating the standard of medical education; for promoting the usefulness, honor and interests of the medical profession; for enlightening and directing public opinion in regard to the duties, responsibilities and requirements of medical men; for exciting and encouraging emulation and concert of action in the profession, and for facilitating and fostering friendly intercourse between those engaged in it."

The founding fathers urged the formation of state and local associations and so framed the constitution as to make the great majority of the members of the national association consist of delegates from permanently organized state and county medical societies throughout the nation. Thus from the very first the democratic principle prevailed.

Mindful, moreover, of the scientific aspects of the organization, committees were established on medical sciences, practical medicine, surgery, obstetrics, medical education, medical literature and publication.

The convention then resolved itself into the American Medical Association.

A committee consisting of one from each state represented was appointed to nominate officers for the ensuing year, and these were unanimously elected. The officers were:

President—Dr. Nathaniel Chapman, Pennsylvania.

Vice Presidents—Drs. Jonathan Knight, Connecticut; Alexander H. Stevens, New York; James Moultrie, South Carolina; A. H. Buchanan, Tennessee.

Secretaries—Drs. Alfred Stillé, Philadelphia; J. R. W. Dunbar, Baltimore.

Treasurer—Dr. Isaac Hays, Philadelphia.

Significant of this birth-giving meeting of May 7, 1847 were resolutions leading toward the preparation and ultimate adoption of the principles of ethics.

A resolution was offered requesting the Congress of the United States to allocate a portion of the funds of the Smithsonian Institution to uses of the American Medical Association, and that resolution was laid on the table. Dr. Austin Flint of New York presented a resolution urging the states to pass laws sanctioning and providing for the prosecution of dissections. That resolution was promptly and unanimously passed.

When Dr. Nathaniel Chapman was called to the chair, he spoke briefly but expressively:

> "He could find no language to express the depth of his gratitude. It had often been his good fortune during his professional life to have been complimented in the same manner, though not in the same degree. This was the most precious of all the honors he had received, as spontaneously conferred by his own brethren. He confessed his incompetence to serve the Association as he could desire. He loved his profession and should be ungrateful if he did not: whatever he possessed in this life had been bestowed by its favors; when he forgot it, or deserted it and its disciples, he remarked, with great emphasis, "may Almighty God forget and desert me." He desired that the Association should be persuaded of his ardent wishes for the cause, and that his most strenuous efforts would be unceasingly directed to advance the dignity of the profession and extend its usefulness.

QUACKERY

From the very first the American Medical Association has prosecuted its war on quackery and more than any other agency in our country can take the credit for the vast improvement that has occurred in the abolition of nostrums, secret medicines and quackery. At the session on May 7, 1847 Dr. John B. Johnson of Missouri introduced a resolution in which he pointed out that numerous and important evils result from the universal practice of allowing persons almost wholly ignorant to engage in apothecaries and still greater from the universal traffic in secret medicines. He urged that schools of pharmacy be established in the individual states and that some rule be adopted that no physician patronize a druggist or an apothecary who deals in "patent" or secret medicines.

The convention adjourned to meet in Baltimore on the first Tuesday in May 1848. Thus ended one of the most significant assemblages in the history of our nation. This was the birth of a great organization.

Dr. Nathan Smith Davis took great pride in the fact that the principle embodied in the first constitution made the national association emanate directly from local medical organizations and institutions. This system of representation gave the organization a legitimate claim to be truly representative of the whole medical profession. Indeed the representatives were so earnest in their desire to avoid dominance by any section in the work of the organization that they also incorporated in the constitution a provision which prohibited the holding of annual meetings twice in succession in the same place.

To recapitulate, the original plan of organization as adopted in 1847 provided that "members of the American Medical Association . . . should hold their appointment to membership either as delegates from local institutions, as members by invitation or as permanent members." There were thus created three classes of membership, of which the delegates constituted the bulk and the most important part. They received their appointment from "permanently organized societies, medical colleges, hospitals, lunatic asylums and other permanently organized medical institutions of good standing." Each appointment was for one year. The basis of representation was one delegate for every ten regular resident members of the medical society, two for every regularly constituted and chartered school of medicine, two for every hospital containing 100 inmates or more, and one for all permanently organized medical institutions of good standing not included in the foregoing summary. In order to admit of representation from portions of the United States not otherwise represented, provision was made for members by invitation. If a physician from sections of the country in which no medical institutions of any sort existed attended an annual session, the Association could constitute him a member by invitation for that session only. He thus became an unofficial delegate for a section that would otherwise be without representation. Thus two classes of members, both, as will be seen, of a purely temporary character and deriving their right of membership either from the organization which they represented or from the Association which invited them to a seat in its deliberations, constituted the voting membership of the American Medical Association. In order that delegates having once been members of the Association might retain some connection with it after their time as delegates had expired, it was provided that all those who had served in that capacity and such other members as might be appointed by the Association, by unanimous vote, might be made "permanent members." They were entitled to attend the meetings and to participate in the affairs of the Association without the right to vote. It was therefore recognized from the time of the first preliminary convention in 1846 that the right to vote should be limited to the duly elected and qualified delegates of local medical societies, colleges and hospitals who came bearing credentials of their election as such. Thus the American Medical Association was from the beginning a delegate body.

When its total membership reached as many as 60,000 members in the state societies, the assignment of one delegate for every ten members would have made a representative body of 6,000. This brought about ultimately the reorganization, of which more will be told later, and led finally to the formation of the House of Delegates of the American Medical Association as we know it today.

When William H. Welch was President of the Association in 1910 he called to mind the battle which took place in the originally constituted convention over the decision as to whether there should be a representative body or an organization in which the officers would themselves perpetuate the control within a small group.

"It is curious to think," said Dr. Welch, "what would have been the history of the Association had the choice not been made in favor of the more democratic representative plan."

This plan, which continued in operation for fifty-five years, was perhaps cumbersome and ineffective, but it was well suited to the conditions that existed at the time of its adoption.

Looking back at the first fifty years of life of the American Medical Association, William H. Welch noted that the founders brought into being a national organization truly representative. "Such an organization," he said, "has inherent elements of strength which secure its future even against its own blunders and still more against attacks from without. The Association has been from the beginning the great unifying force for the profession of this country, whose common interests it has been its chief endeavor to serve."

In concluding his address, William H. Welch said:

> Organized effort is a distinguishing mark of modern civilization. It is as essential for the advancement of science, of education, of social and industrial reform, of philanthropic endeavor as for the promotion of commerce. With the remarkable progress of medical science, especially during the last three decades, man's power to control disease has been vastly increased and the sphere of usefulness of the physician has been correspondingly widened and with advancing knowledge will continue to expand. The skill and knowledge of the physician and sanitarian have acquired a new and ever increasing importance and significance in the movements for social amelioration, for improvement of the conditions of labor and of living, for the conservation and most efficient utilization of the productive energy of the world, and for the reclamation of regions now yielding no return to civilization.
>
> Among the organized forces for advancing the prosperity, the happiness and the well being of the people of this country, the American Medical Association has an important part to play. We are justified in the confidence that, with the united support and loyalty of the profession, this Association, broadly representative and standing for the best ideals of medical science and art and for professional and civic righteousness, will contribute a beneficent share to the working out of our national destiny.

(To be continued)

Clinical Notes, Suggestions and New Instruments

NEW TREATMENT FOR INCOMPETENT VALVES IN VARICOSE VEINS

GERALD H. PRATT, M.D.
New York

In several reports published in the last ten years I have discussed the problem of treating varicose veins.[1] The large number of patients who are disabled from the complication of pathologic changes in the veins of the lower extremities makes this problem increasingly important.

The technic of resecting a section of the saphenous vein and its branches at the femoral junction is well standardized.[1a] The necessity of an adequate resection to divide any connection between the superficial and the femoral system high in the groin without leaving a saphenous stump requires continued emphasis. Approximately one fourth of all my new patients have had a ligation previously, and in all but 2 of these patients on whom I have reoperated in the last year either a large saphenous vein or a dilated branch acting as a saphenous vein has been found in the groin.

When an adequate high resection has been performed, recurrent veins, venous ulcers and other complications are the result either of failure to resect the incompetent communicating branch points at the correct juncture or of the development of new incompetent points. In 1941 a simple test for determining these incompetent points was presented.[1c] This test has proved

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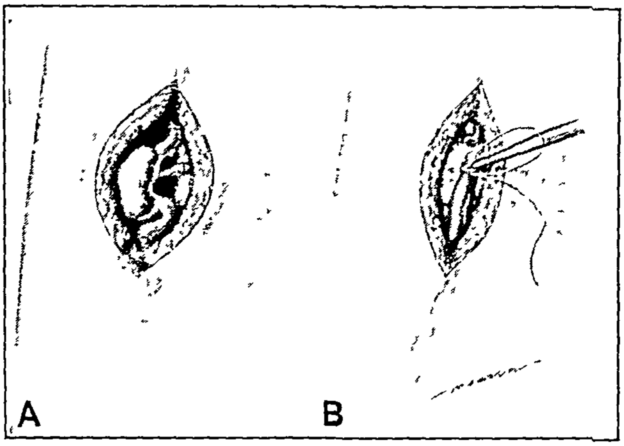
From the Vascular Surgical Service, New York Post-Graduate Hospital and Medical School of Columbia University.

[1] (*a*) Pratt, G. H.: Surgical Treatment of Varicose Veins and Ulcers by Segmental Sclerosis, Am. J. Surg. **44**: 31-38 (April) 1939; Segmental Sclerosis of the Saphenous Vein for Varicose Veins, Ulcers and Diminished Arterial Supply, J. A. M. A. **113**: *925-927* (Sept. 2) 1939; (*b*) The Surgical Problem in Peripheral Vascular Disease, Am. J. Surg. **46**: 321-326 (Nov.) 1939; Surgical Considerations in the Treatment of Chronic Lymphedema and of Varicose Veins, Bull. New York Acad. Med. **16**: 381-388 (June) 1940; (*c*) Test for Incompetent Communicating Branches in the Surgical Treatment of Varicose Veins, J. A. M. A. **117**: *100-101* (July 12) 1941; (*d*) The Importance of a Knowledge of Vascular Surgery in World War II, Am. J. Surg. **56**: 335-336 (May) 1942. Lake, M.; Pratt, G. H., and Wright, I. S.: Arteriosclerosis and Varicose Veins: Occupational Activities and Other Factors, J. A. M. A. **119**: 696-701 (June 27) 1942. Pratt, G. H.: Results of Surgical Treatment of Varicose Veins, J. A. M. A. **122**: 797-800 (July 17) 1943.

entirely satisfactory in over 3,000 instances in both civilian and naval hospital experience and has replaced all other methods of deciding the points for resection. This test should be performed and the marking of the point should be done in the operating room just before the operation. On the average, three such incompetent points are resected.

Where incompetent valves permit femoral reflux to the superficial veins, these veins become dilated and tortuous. Because of their weight and the resultant edema, the soft tissues sag and become soft and relaxed. Noting the excellent results obtained in the treatment of varicoceles by suturing the ends of the veins together and thus suspending the resected ends, a somewhat analogous measure has been instituted after the removal of the so-called "blowout" points. After the "blowout" is resected and the feeding or T-shaped veins divided and tied off, the distal end is transfixed and sutured on tension to the deep fascia. This stretches the tortuous distal end and lifts and suspends the spongy soft tissues. The distal veins become a fibrous band which is attached to the deep tissues, and this acts as a fibrous lift to the tissues. Since in most instances the involved vein is a feeder to an ulcerous or preulcerous area at or above the inner malleolus, the tendency to ulceration is decreased. *The movement of the deep fascia keeps the vein* tight, empties the branches and aids its fibrosis. The physical appearance of the ankle is improved at once



A in the illustration, resection of incompetent communicating vein with suspension of distal end. *B*, T-shaped incompetent point resected; distal end transfixed and sutured to deep fascia.

This procedure now has been followed in all instances for the last year in civilian practice and for the preceding year in the Navy, and the improvement in the condition of these legs is apparent to all observers. This is true especially when there are ulcers present. The healing time is reduced and the attendant edema and dermatitis decrease more rapidly.

No one measure can ever be the answer to the problem of varicose veins. Elimination of all incompetent valves is paramount in importance, but this does not resolve the whole problem. The fungous infection which is nearly always present needs control, and in my practice this responds best to soaks with potassium permanganate solution in 1:5,000 strength every second or third day. Elevation and adequate support with guided walking exercise is also helpful. Since these patients have defective valves or pathologic changes in the vein wall they will need observation from time to time. As do patients with defective teeth or with pulmonary problems, they should have a check-up examination at regular intervals. An occasional dilated vein may appear and require an injection. If incompetent connections between the femoral and the saphenous system are not present this is effective. A new incompetent point may need a local resection later.

In addition to this program, it is now suggested that the surgical suspension of the distal end of "blowout" veins will help in the control of this difficult and widespread condition. The suspension can be performed likewise in the thigh or groin when dilated tortuous veins show that it is indicated.

30 East Sixtieth Street.

Council on Pharmacy and Chemistry

REPORT TO THE COUNCIL ON PHARMACY AND CHEMISTRY

The office of the Council on Pharmacy and Chemistry and other offices at the headquarters of the American Medical Association have been receiving an increasing number of inquiries on drugs that have been used and proposed for the relief and control of asthma and allergy in general. There has been an unfortunate amount of publicity given to certain aspects of this subject, and confusion has resulted. To dispel the confusion and present the medical profession with a comprehensive review of the newer aspects of drug therapy, a report has been prepared by Dr. Samuel M. Feinberg. The Council expresses its appreciation of the cooperation shown by Dr. Feinberg. It hopes that its offices will be freely used by members of the medical and allied professions who have further inquiries concerning the availability and usefulness of the articles described in the following presentation and of other drugs that may be available but not discussed in the report by Dr. Feinberg.

Austin Smith, M.D., *Secretary.*

HISTAMINE AND ANTIHISTAMINIC AGENTS

Their Experimental and Therapeutic Status

SAMUEL M. FEINBERG, M.D.
Chicago

The demonstration of the phenomena of anaphylaxis, which had its impetus at the turn of this century, was largely responsible for the progress in the development of an understanding of the allergic diseases. First, attention was directed to the fact that the clinical symptoms of such conditions as asthma and hay fever resembled closely the anaphylactic symptoms in the guinea pig. Then, in rapid order, it was shown that the principles of active and passive sensitization, desensitization, demonstration of tests for specific sensitivity and the presence of transferable antibodies were applicable to both anaphylaxis and allergy. Particularly the phenomenon of desensitization in anaphylaxis—the production of a refractory state by frequent small injections of the antigen—was welcomed and applied to the therapy of allergic conditions.

No sooner had specific desensitization been demonstrated than experimenters began to turn their energies to find a method which would desensitize, or inhibit anaphylaxis, without the employment of a specific antigen. Such nonspecific antianaphylaxis would become an extremely useful tool not only experimentally but, conceivably, also clinically. Up to 1932, at least one hundred and sixty-five substances or methods[1] aiming at nonspecific inhibition of anaphylaxis had been reported. Among these may be mentioned barium sulfate, barium chloride, atropine, ether, chloral hydrate, nonspecific serums and proteins, desensitization with a heterologous antigen, benzene in large doses, heparin, intercurrent infection with Mycobacterium tuberculosis and reduction in barometric pressure. Although some of these methods possessed a certain degree of merit, on the whole they were impractical, too hazardous or insufficiently effective.

In recent years many additional methods aiming at nonspecific inhibition of anaphylactic shock and allergic manifestations have been proposed.[2] For the most part, these claims are negative, of doubtful value or not properly corroborated. For example: barbital, pernoston and tribromoethanol were claimed[3] to produce reduction in anaphylaxis, but the effective doses of these drugs were so toxic as to be frequently fatal. The use and abuse of potassium salts and sodium thiosulfate in the treatment of allergic manifestations led to their experimental trial by Carlson and Whitehead[4] in anaphylactic shock with negative results. According to Hofmann,[5] ascorbic acid (vitamin C) injected into guinea pigs prior to the anaphylactic dose of the antigen reduced the mortality rate to one half. Many other workers, however, failed to confirm a protective effect. The value of ascorbic acid in the therapy of allergic conditions has been disappointing[6] The claimed benefit of hesperidin (vitamin P) in anaphylaxis[7] requires corroboration. Ethylene disulfonate (Allergosil), which has been so widely publicized in the treatment of allergy, has been found therapeutically ineffective by a committee of specialists[8] and ineffective in the inhibition of anaphylaxis.[9]

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[1] Hill, J. H., and Martin, L.: A Review of Experimental Studies of Non Specific Inhibition of Anaphylactic Shock, Medicine **11**: 141 (May) 1932.

[2] Feinberg, S. M.: Non Specific Inhibition of Anaphylaxis, editorial, *J. Allergy* **15**: *302 (July) 1944.*

HISTAMINE—ITS ROLE IN THE MECHANISM OF ANAPHYLAXIS AND ALLERGY

From the very beginning of observations in anaphylaxis and in allergy it has been evident that even though a specific antigen is required for the production of the reaction in the individual case, the manifestations produced do not differ from those induced by different antigens. It has seemed from the start, therefore, that one substance common to all anaphylactic reactions might be responsible for the manifestations In 1910, Dale and Laidlaw[10] pointed out the similarity of manifestations in the effect of histamine and in anaphylactic shock. This constituted the starting point for the progression of experimental evidence incriminating histamine as the mediator of anaphylactic symptoms. Best and his associates,[11] in 1927, demonstrated the presence of histamine as a normal constituent of many tissues and thus furnished a reasonable explanation for the source of the histamine in anaphylaxis. At about this time it was also becoming evident that the variation in the anaphylactic manifestations in different species of animals could be reasonably explained on the basis of quantitative differences in histamine content. Later it was shown[12] that the lungs of guinea pigs and the livers of dogs were decidedly reduced in histamine content after anaphylactic shock. Subsequently a histamine-like substance was demonstrated[13] in the blood and thoracic duct lymph of the dog during anaphylaxis, and a similar substance was found[14] in the blood of the guinea pig.

When the amounts of histamine found in the anaphylactic dog in the blood of the inferior vena cava just above the diaphragm were observed to be similar to those amounts required to produce the same vascular changes by intravenous injection, Dragstedt and Mead[15] were able to complete the case for histamine as an important factor in the production of the manifestations of anaphylaxis It was subsequently shown by Code[16] that 70 to 100 per cent of the normal blood histamine of man, horse, goat, calf, dog, bullock and guinea pig was in the white cells.

There is no valid argument against the evidence that histamine constitutes a potent factor in the production of the symptoms of anaphylactic shock. There is justification for the assertion that not all the manifestations can be explained on the basis of histamine activity. One such outstanding phenomenon is the incoagulability of the blood. This has been satisfactorily accounted for by the demonstration of a release of heparin during anaphylaxis Other anaphylactic manifestations not attributable to histamine, and the mechanism of which is not properly explained, are the early increased blood coagulability, the leukopenia, changed sedimentation rate and the delayed death from anaphylactic shock occurring in some instances

The evidence for the role of histamine in the mechanism of production of allergic manifestations in man has not kept pace with that for anaphylaxis in animals. A good part of the evidence in favor of the histamine concept of allergy is based on the demonstration of the various points of resemblance between allergic and anaphylactic reactions, and on the fact that the effects of histamine administered to man are consistent with some of the phenomena of allergy. It was shown by Lewis and Grant[17] and others that the whealing of dermographism, or urticaria factitia, and of specific food allergy had all the characteristics of histamine wheals. Subsequently it was demonstrated[18] that the manifestations of hypersensitiveness to cold—a drop in blood pressure and an increase in pulse rate, gastric acidity and skin temperature—were those resembling the action of histamine.

Although there is some indication that there is an increased level of histamine in the blood in allergic reactions,[19] the amounts involved and the difficulties in technic have not permitted conclusive proof of this point. Recent improvements of the methods used in isolating the blood histamine and new methods of quantitatively measuring it may give much more satisfactory data. The fact that the histamine in the leukocytes is released from the blood in vitro by the addition of the specific allergen [20] not only is a further demonstration of the role of histamine in allergic reactions, but it points toward many further possibilities of studying the mechanism of allergy. It has been shown [21] further that histamine can be released from the skin by the application of the specific agent.

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[3] Hofmann, H Ueber die pharmakologische Beeinflussung des anaphylaktischen Schocks durch Narkotica und Analeptica, Arch f exper Path u Pharmakol **199**: 664, 1942

[4] Carlson, R G, and Whitehead, R W The Effect of Sodium, Potassium and Thiosulfate Ions on Anaphylaxis, J Allergy **14**: 462 (Sept) 1943

[5] Hofmann, H Ueber Die Beeinflussung des anaphylaktischen Schocks durch Vitamin C und Nebennierenrindehormon, Arch f exper Path u Pharmakol **199**: 631, 1942

[6] Friedlaender, S, and Feinberg, S M · Vitamin C in Hay Fever Therapy and Blood Levels, J Allergy **16**: 140 (May) 1945 Hebald, S Clinical Evaluation of Ascorbic Acid in the Treatment of Hay Fever, ibid **15**: 236 (May) 1944

[7] Hiramatsu, N Studies on Vitamin P (Hesperidin) IV Influence of Hesperidin upon Serum Anaphylaxis, Jap J Dermat & Urol **49**: 304, 1941, abstracted, Far East Bull **1**: 37 (Sept) 1941

[8] Report of Committee on Medicaments and Pharmaceuticals, read at the meeting of the American Academy of Allergy, Dec 9, 1945.

[9] Fisk, R T, Small, W S, and Foord, A G · The Experimental Use of Ethylene Disulfonate (Allergosil Brand) in the Prevention of Anaphylaxis in Guinea Pigs, J. Allergy **15**: 14 (Jan) 1944

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HISTAMINE THERAPY AND TOLERANCE

On the basis of the presumed role of histamine in the mechanism of allergy and on the supposition that a tolerance to histamine could be obtained by repeated administration of this agent, many clinicians were influenced to undertake histamine therapy in allergic diseases. Ramirez and St. George [22] in 1924 reported their observations in a group of patients with "endogenous" asthma. They believed that this group owed their difficulties to the fact that they were more sensitive to histamine than were other persons. They treated 10 patients with increasing doses of histamine and obtained temporary good results in 2. In 1935, Dzsinich [23] claimed good therapeutic results with small doses of histamine in a series of patients with asthma and urticaria. It has also been claimed by Farmer [24] that effective results may be obtained in asthma and vasomotor rhinitis by frequently repeated small doses of histamine.

A series of injections of histamine was claimed by Millet [25] to produce favorable results in angioneurotic edema. Ernestene and Banks [26] treated a group of 13 patients with pruritus, urticaria and angioneurotic edema, using 0.5 mg. doses of histamine, at first twice a day, then less frequently. They reported improvement in half the cases, although recurrences were present. In spite of the claimed results the authors stated that "no evidence of diminished sensitivity to histamine was observed in our patients."

In 1927, Friedlaender and Petow [27] described good results in a series of cases of migraine with the administration of small doses of histamine (0.01 to 0.001 mg.) every two days. Horton and his associates [28] in 1939 described the syndrome of "erythromelalgia of the head" in 84 patients. This consisted of periodic attacks of simple migraine, with the following manifestations on the affected side: swelling of the temporal vessels, flushing and increased temperature of the skin, engorgement of the soft tissues of the eye and watering of the eye and nose. These authors regarded this type of headache as due to the release of histamine. They claimed to reproduce the syndrome in these persons by the injection of 0.3 to 0.5 mg. of histamine. The patients were treated by subcutaneous injections of the substance. The reports resulted in a fairly extensive trial of histamine in various types of headache. One of the most recent reports is that of Butler and Thomas,[29] who claimed that excellent results were obtained in a series of patients with migraine by the intravenous administration of histamine.

Attempts to demonstrate that histamine tolerance can be achieved have been inconclusive. Farmer [30] attempted to prove that the oral and parenteral administration of histamine influenced the sensitivity of the uterine strip of the guinea pig to histamine and to the specific antigen. From the standpoint of the usual range of variations in the results of such experiments, his data cannot be regarded as impressive. Karady [31] has also presented evidence favoring histamine tolerance. She found that pretreatment with histamine in guinea pigs caused increased tolerance to the activity of histamine amounting to 100 per cent. Anaphylactic death in guinea pigs sensitized to horse serum could be prevented in the majority by pretreatment with histamine, while in sensitivity to the whites of eggs pretreatment with histamine had no influence on anaphylactic shock. Such varying results make the entire report of doubtful value. Clark and MacKay [32] gave daily injections of histamine for two weeks to a series of guinea pigs: they were not able to show the development of a tolerance to histamine. Mayer, in the course of experimenting with anatagonists to histamine, observed that repeated inhalations of histamine did not cause increased tolerance. Wells, Gray and Dragstedt,[33] working with dogs, found in a large series of trials that there was no evidence of tolerance or desensitization induced as a result of repeated injections of histamine.

Attention should be called to the fact that there is a wide range of sensitivity to histamine in different persons and that there is a lack of real evidence that the variations are greater among allergic than among nonallergic persons. There is not a sound basis for the belief that allergic manifestations are produced because of a heightened sensitivity to histamine. If histamine has to do with the allergic reaction it is because an amount above the tolerance dose is released from the tissues. Repeated observations over many years lead me to believe that injections of histamine in man do not increase his tolerance, that each individual has his own particular reactive dose, and that this dose is not affected by treatment with histamine. Furthermore, even if it were granted that in animals or man the tolerance to histamine could be increased twofold or threefold by such treatment, such protection could not suffice for the conditions encountered in anaphylaxis and allergic reactions. From my experience and from that of others it is felt that the effectiveness of histamine in allergic conditions has been exaggerated, and that whatever beneficial results are obtained must be explained on a basis other than desensitization to histamine.

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HISTAMINE-AZOPROTEIN

Since unbound histamine failed to produce antibodies to itself after its parenteral administration, it was thought by Fell and his associates[34] that a histamine conjugate might be more effective in the stimulation of antibodies to histamine. By means of azo linkage, they coupled histamine to various proteins such as casein, horse serum globulin, cow serum globulin and dog serum. In precipitin tests on rabbits' blood they found that the specificity had been partly determined by the hapten portion (histamine). However, the precipitin titer for the protein fraction was fully as high. In a series of guinea pigs sensitized to ovalbumin and showing a mortality rate of 52 per cent from anaphylactic shock, pretreatment with histamine-azo-despeciated horse serum globulin diminished the mortality rate to 8 per cent. Other types of immunologic experiments also indicated that animals treated with histamine conjugate antigens developed antibodies that were partially specific for the histamine hapten.

Sheldon and his associates[35] in 1941 reported their results of treatment with histamine-azoprotein in a series of 39 patients. The duration of treatment varied from 1 to 20 months, and the highest dosage of the solution ranged from 0.1 to 1.0 cc. of a 1 : 10 antigen. Of 17 patients with atopic or contact dermatitis, 8 had either excellent or good results. Of 22 patients with asthma, rhinitis, urticaria and other allergic manifestations, excellent results were obtained in 10 Cohen[36] claimed to have obtained good clinical results, but presented no statistical data in substantiation.

In sampling the clinical experience of allergists, the Committee on Pharmaceuticals and Medicaments of the American Academy of Allergy obtained information which indicates that those who have given the histamine-azoprotein a fair trial either have found it totally ineffective or have been able to attribute whatever measure of effectiveness it had to its nonspecific action. My own personal experience has been in agreement with that of the majority of other allergists. Although I began to use this substance over five years ago, I have seen only occasional benefit in allergic conditions.

In 1943, Cohen and Friedman[37] presented data in support of the claim that histamine-azoprotein injections in man developed precipitins and antibodies capable of neutralizing histamine. Insufficient controls and irregularity of the results make the value of these observations open to doubt. Cohen and Friedman[38] also showed that allergic patients treated with histamine-azoprotein displayed a heightened tolerance to histamine by iontophoresis as compared with a normal group of subjects However, figures were not presented for the histamine tolerance of these allergic patients prior to treatment with the histamine conjugate. In a recent report Cohen and Friedman[39] stated that the degree of immunity afforded by this treatment is not great, but they believed that it serves as an adjunct in well managed cases of allergy. Hebald and his associates[40] failed to obtain a protective action against constitutional reactions from moderate ragweed overdosage by pretreatment with histamine-azoprotein. Dundy and his collaborators[41] could not obtain any change in whealing responses or in the clinical conditions of allergic patients.

A recent paper by Coffin and Kabat[42] may throw light on the general confusion of the status of this compound. They conducted experiments to determine the effect of treatment with histamine-azoprotein on histamine tolerance and on anaphylaxis in the guinea pig. Pretreatment with histamine-azoprotein did not have a significant influence on the mortality rate from the minimum lethal dose of histamine given intravenously. Passively sensitized animals pretreated with histamine-azoprotein, either alum-precipitated or with adjuvants, displayed a definite protection against anaphylaxis. However, animals pretreated with human serum and adjuvants showed similarly striking anti-anaphylactic capacities.

It would seem that this whole subject of protection against anaphylaxis and histamine needs a more careful reevaluation.

HISTAMINASE

In 1929 Best[43] demonstrated that some of the tissues contain a substance or enzyme capable of destroying histamine The ability of this histaminase to destroy histamine when the two are mixed and incubated was confirmed by many workers. It was only natural that much hope should have been raised in the expectation that an antihistaminic and an antiallergic substance had been found which would be effective in allergic conditions. Many experimenters soon discovered that although histaminase does destroy histamine under ideal conditions in vitro, it lacked an effect on histamine or anaphylaxis in the living animal

A case of hypersensitiveness to cold was claimed by Roth and Horton[44] in 1937 to have responded to therapy with histaminase. In 1939, Foshay and Hagebusch[45] claimed effective results from the use of this medicament in serum sickness. This was followed by widespread use of histaminase and by a number of favorable clinical observations, such as those in vasomotor rhinitis,[46] hay fever,[47] insulin allergy,[48] urticaria,[49] dermatoses[50] and almost all allergic manifestations.[51]

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42 Coffin, G S , and Kabat, E A The Effects of Immunization with Histamine Azoprotein on Histamine *Intoxication and Passive Anaphylaxis* in the Guinea Pig, J Immunol **52**: 201 (March) 1946

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44 Roth, G M , and Horton, B T Hypersensitiveness to Cold Treatment with Histamine and [illegible], Proc Staff Meet , Mayo Clin **12**: 125 [illegible]

45 Foshay, L , and Hagebusch [illegible] eatment of Serum Sickness, J A M A [illegible]

46 Roth, G M , and Horton, [illegible] Effects on Man and Its Therapeutic Val[illegible] k Acad Med **16**: 570 (Sept) 1940

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50 Goldberg, L C Histaminase in the Treatment of Allergic Dermatoses, J A M A **115**: 429 (Aug 10) 1940

51 Prickman, L E The Use of Histaminase in Certain Allergic Conditions, J Allergy **12**: 193 (Jan) 1941.

Concomitantly with the above claims there began to appear reports from clinicians having extensive experience with allergic manifestations and their evaluation. Toomey and Kriete[52] found that histaminase caused neither prevention nor amelioration of serum sickness Eger and Stone,[53] administering the drug orally throughout the course of serum sickness in a series of patients, failed to observe a difference in the severity or duration of their symptoms as compared with those of an untreated group. In a series of hay fever patients Keeney[54] observed no benefit. Miller and Piness[55] failed to obtain results in any cases of hay fever, asthma or atopic dermatitis. Benefit was not obtained in a series of 48 children with various types of allergy by Peshkin and his associates.[56] Frank and Harris[57] found histaminase ineffective against asthma, vasomotor rhinitis and urticaria. In 1940 Alexander[58] concluded that the results of histaminase therapy were disappointing, although he felt that further investigation was warranted. My own clinical experiences with histaminase dating back nearly ten years indicate that it lacks a specific effect in allergic conditions. Best, the discoverer of histaminase, was finally moved in 1940, together with McHenry,[59] to make the following statement: "Our investigations over a period of 10 years have failed to show that the intravenous or intramuscular administration of histaminase has any effect upon histamine present in the body or on that given by injection. . . . For some years we have consistently answered numerous inquiries about histaminase with the statement that we believed there was no physiological basis on which to rest its clinical use."

The Council on Pharmacy and Chemistry of the American Medical Association[60] in 1940 issued a report stating that histaminase and the brand Torantil did not show sufficient evidence of clinical worth to justify its inclusion in N. N. R.

There is considerable evidence that histaminase does not modify the whealing reactions in man In a cold-sensitive patient Maisel and Abramson[61] made careful studies of the measurements of whealing produced by a standard cold stimulus: prolonged treatment with histaminase did not produce changes in the size of the wheal or in its rate of formation. Keeney[54] failed to obtain change in the histamine wheals in hay fever subjects who were treated with histaminase. Miller and his associates[62] demonstrated that the oral or parenteral use of histaminase did not have influence on the reactions of the skin to dilutions of histamine or on the sensitivity of passively sensitized sites to an allergen Change in the size of histamine wheals was not observed by Knoll and Beinhauer[49b] in 50 nonallergic subjects after prolonged administration of histaminase. Vaughan and Blanton[63] also failed to obtain changes in histamine whealing. Simon[64] showed, further, that the injection of histaminase locally did not influence either the histamine wheal or the wheal produced by a specific allergen in a passively sensitized site. In a study of 36 allergic patients, Rose[65] found that the administration of histaminase did not alter the blood histamine levels.

The claim of Karady and Browne[66] in 1939 that histaminase was effective in the prevention of histamine and anaphylactic shock led many other workers to reinvestigate this subject. Alexander and Bottom,[67] Youngener and his associates[68] and Rose and Browne[69] failed to prevent histamine shock in guinea pigs by the administration of histaminase. That histaminase is ineffective in the prevention of anaphylactic shock was demonstrated by the reports of Courtright and his associates,[70] Hawes and his co-workers[71] and Barlow and Homburger.[72] The experimental asthma produced in guinea pigs by the inhalation of an atomized antigen was not influenced by histaminase, according to Neeley.[73]

SYMPATHOMIMETIC DRUGS

It is not the purpose of this paper to discuss the entire range of drugs employed in the therapy of allergic manifestations. The only object in mentioning the sympathomimetic drugs at this juncture is to point out the difference in the mechanism of their action as compared with that of the antihistaminic agents. Epinephrine, ephedrine, Propadrine hydrochloride and similar drugs owe their antiallergic action primarily to the vasoconstriction they produce. They apparently have no appreciable action on the immunologic or chemical mechanism involved in the allergic reaction. It is important to realize this for several reasons, including the limitations of their action and the fact that they do not interfere with the concomitant use of antihistaminic agents.

EARLY ANTIHISTAMINIC AGENTS

The realization that histamine plays an important part in the anaphylactic and allergic reaction has led to considerable effort to discover a means of combating this substance. Almost all the proposed methods which showed any appreciable degree of promise have had in common the characteristic of competitive action, i. e., their activity is due to competitive attachment to the cell receptor, thus displacing or replacing histamine.

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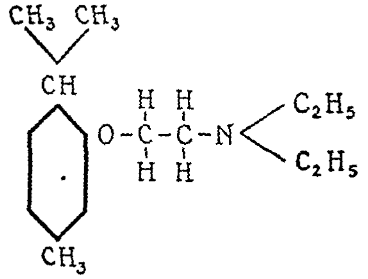
The amino acids, histidine, cysteine and arginine were shown to have histamine-inhibiting properties. In 1937, Edlbacher and his associates [74] showed that these substances inhibited the contraction of the guinea pig intestine produced by histamine Arginine was then found to inhibit the contraction of the sensitized guinea pig intestine [75] and to prevent anaphylactic shock [76] The antihistaminic action of histidine was corroborated by the work of Mackay [77] and Halpern [78] The behavior of the amino acids was recently reinvestigated by Landau and Gay.[79] In the main, these workers corroborated the results obtained by the earlier investigators, but they pointed out that not all histamine symptoms could be prevented and that effective doses of arginine would cause a high incidence of fatal toxic reactions They did not discover evidence of inhibition of anaphylactic shock by arginine. A 2 per cent arginine solution given intracutaneously in man failed to affect the pollen reaction either when injected into the wheal or when combined with the pollen There has been general agreement that the amino acids are not sufficiently active agents, and that they are too toxic for animals and man

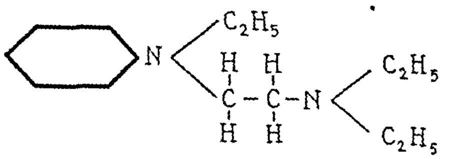
In 1933 Fourneau and Bovet [80] demonstrated that certain phenolic ethers have the property of counteracting the action of histamine in vivo and in vitro This constituted the starting point for the development of the subject of modern antihistaminic drugs. Fourneau and Bovet found the most effective of their phenolic ethers to be:



2 isopropyl 5 methylphenoxyethyldiethylamine
(thymoxyethyldiethylamine or compound 929 F)

Bovet and Maderini [81] demonstrated that this substance has an ergotoxine-like effect on the reversal of the pressor action of epinephrine. In 1937 Staub and Bovet [82] described the antianaphylactic properties of this drug. The compound was found to protect guinea pigs against two lethal doses of histamine, but it produced well defined toxic effects in the animals.[83] Climenko and his associates [83] did not regard this drug as truly antihistaminic because they found that it was able to prevent the uterine horn contractions of barium chloride and acethylcholine. Rosenthal and Brown,[84] however, ascribed a selective antihistaminic action to this drug. A local anesthetic action was found to be another property of this substance. Rosenthal and Minard [85] cited this action in support of their contention that the sensation of cutaneous pain is the result of a local liberation of histamine

The great toxicity of the phenolic ethers led Staub [86] to turn her attention to another series of Fourneau compounds having the ethylenediamine radical. Of the group she studied the most promising was:



N phenyl N ethyl N′ diethylethylenediamine or compound 1571 F

Compound 1571 F was antihistaminic and antianaphylactic and, according to Staub, had no effect on the cutaneous reaction to histamine. Among others, Wilcox and Seegal [87] studied this compound. By prior administration of 1 to 4 mg. of the drug to guinea pigs they obtained protection against two to six minimal lethal doses of histamine The animals, however, showed pronounced toxic effects from the antagonist. Sensitized guinea pigs were fairly well protected against anaphylactic shock. The decreased coronary flow in the perfused heart of the guinea pig, due to the addition of histamine or the specific antigen was prevented by adding compound 1571 F to the perfusion fluid. The effect of compounds 929 F and 1571 F on gastric response to histamine or on food ingestion in dogs varies with the experimenters.[88]

From the experimental and preliminary clinical trial of compounds 929 F and 1571 F it was concluded that their toxicity was too great to warrant their use therapeutically

RECENT FRENCH ANTIHISTAMINIC DRUGS
(MOSNIER COMPOUNDS)

In 1942 Halpern [89] described his experimental observations with two of the most promising of a new series of compounds prepared by M Mosnier in the chemical laboratories of the Rhone-Poulenc Society of Chemical Manufacturing. These were:

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[85] Rosenthal, S R , and Minard, D Experiments on Histamine as the Chemical Mediator for Cutaneous Pain, J Exper Med **70**: 415 (Oct) 1939

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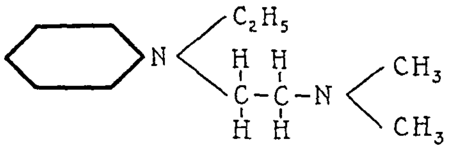
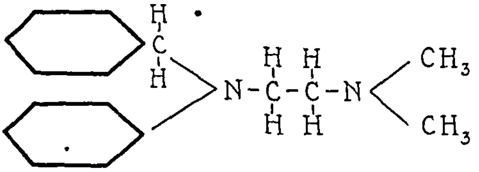


N'phenyl N'ethyl N dimethylethylenediamine
(dimethylaminoethylaniline or compound 2325 RP)

and



N'phenyl N'benzyl N dimethylethylenediamine
(dimethylaminoethylbenzylaniline, "Antergan" or compound 2339 RP)

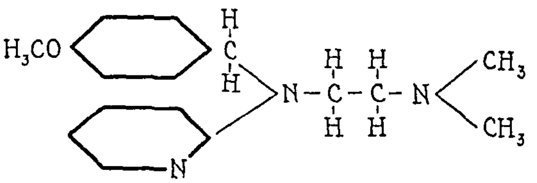
As will be noted, compound 2325 RP differs from 1571 F only in the substitution of a dimethyl for a diethyl group, while compound 2339 RP differs from 2325 RP in the substitution of a benzyl for the ethyl group.

Compound 2339 RP (Antergan) was found to be the more desirable, and Halpern concentrated his studies mainly on this drug. He found that shock and death from intravenous histamine and anaphylaxis could be prevented in the guinea pig by the previous administration of Antergan. The addition of small amounts of this drug to the bath prevented the histamine contraction of the intestinal strip of the guinea pig. Its comparative efficiency in such activity was as follows: 1571 F —0 1; 2325 RP —1 0; 2339 RP —15. In vitro contraction of the sensitized intestinal strip could be prevented either by the addition of the drug to the bath or by its administration to the intact animal While Antergan had a slight inhibiting effect on the activity of acetylcholine or barium chloride its effect was much greater against histamine.

The administration of 1 mg of Antergan per kilogram of body weight hypodermically prevented asthma in guinea pigs from aerosol histamine In such action this compound was not only more effective than the other histamine anatagonists studied up to that time but considerably more effective than ephedrine or atropine. Epinephrine was most active, but its toxicity hampered its efficiency In guinea pigs the LD-50 of Antergan (the dosage fatal to 50 per cent of the animals) was 175 mg per kilogram of body weight hypodermically and 300 mg. orally Toxic doses resulted in excitation and convulsions

The results of therapeutic trials of Antergan began to appear in the European literature in 1942 Gaté and her co-workers[90] described favorable effects in a series of cases comprising urticaria, eczema, hay fever, perennial rhinitis, migraine, asthma, dermatitis medicamentosa and anal and vulvar pruritus. Good results against hay fever were emphasized by Sciclounoff and Junet,[91] but their results against asthma were not as good. Aubertin[92] stressed the efficacy of the drug in the urticarial dermatoses. Satisfactory results were also reported by others.[93] The daily intake of the drug varied from 200 to 1,500 mg. Parrot,[94] as well as others,[91] showed that the ingestion of large doses of Antergan inhibited the cutaneous whealing from histamine.

More recently a new ethylenediamine derivative was described by Bovet and his associates.[95] This is:



N p methoxybenzyl N dimethylaminoethyl α aminopyridine
(Neoantergan or compound 2786 RP)

This compound is claimed to be more effective and less toxic than Antergan In guinea pigs a dose of 0.1 mg. per kilogram of body weight prevented death from five to ten lethal intravenous doses of histamine, while a dose of 1 mg per kilogram of body weight protected against seventy-five lethal doses of histamine. The contraction of the intestinal strip produced by 1 to 10,000,000 dilutions of histamine was abolished by 1 to 100,000,000 dilutions of Neoantergan. The capillary permeability of the dog as the result of histamine was decidedly attenuated by this compound.[96] It is claimed by Decourt[97] that Neoantergan is more effective and less toxic than Antergan clinically, but according to a personal communication from Halpern, its advantage over Antergan clinically is based more on the fact that it may be better tolerated rather than that it is more active

The experience of my associates and me with Neoantergan is as follows In guinea pigs it was highly effective in the prevention of death from histamine and anaphylactic shock In seasonal hay fever[98] the drug was of benefit to 39 of 60 patients (65 per cent), in perennial vasomotor rhinitis to 8 of 10 patients, and in asthma to 1 of 5 patients.

Recently, Halpern[99] has claimed that in experiments with another new compound he has been able to protect against twelve hundred to fifteen hundred lethal doses of histamine

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[90] Gate, J, Thiers, H, Cuilleret, P, and Pellerat, J Recherches sur l'action de nouveaux composes antihistaminiques de synthese, J. de med de Lyon **23:** 401 (July 20) 1942

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[96] Bonvallet, M, and Decourt, P Action du 2786 RP sur l'augmentation de permeabilite des capillaires cutanes proboquee par une injection intradermique d histamine, Compt rend Soc de biol **138:** 224, 1944

[97] Decourt, M J Le medication antihistaminique, Semaine d hôp de Paris **21:** 707, 1945

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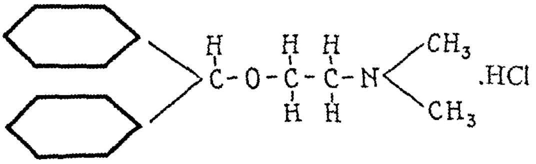
NEW AMERICAN HISTAMINE ANTAGONISTS

In the last few years intensive research has been conducted in pharmaceutical laboratories in this country in the attempt to find an effective and safe histamine antagonist for clinical use. As a result of this research two compounds have been made available for experimental and clinical trial. The experimental and therapeutic experience with these drugs by a number of workers, including me, will be described here. It should be kept in mind, however, that these products are not necessarily the final ones of their kind and that pharmaceutical institutions are continuing their quest for more potent and less toxic drugs.

BETA-DIMETHYLAMINOETHYL BENZOHYDRYL ETHER HYDROCHLORIDE (BENADRYL HYDROCHLORIDE)

This compound has the structural formula:



According to Loew and his associates,[100] Benadryl is two to four times more effective than compounds 929 F and 1571 F in preventing the death of guinea pigs from the inhalation of histamine. It was also effective in preventing death from histamine which was administered intravenously. In its antianaphylactic activity it was found at least as active as compound 1571 F. Wells and his co-workers [101] demonstrated that the activity of this histamine antagonist is directed to only a portion of the histamine. The injection of 10 mg. per kilogram of body weight of Benadryl in the dog prevented fatal anaphylactic shock and fatal histamine shock due to the injection of histamine in amounts comparable to those liberated from the liver in anaphylaxis.[102] This finding was advanced as an additional argument that histamine liberation plays a dominant role in anaphylactic shock.

Whealing.—One of the first questions that presented itself was: What effect does this drug have on histamine wheals? And if any diminution of the wheal occurs, does it have a similar action on the antigen-antibody wheal? Although the ingestion of 50 to 100 mg. of the drug resulted in the disappearance or diminution in the whealing of a series of patients with dermographism, the incidence of specific reactions with antigens by scratch tests indicated that there was a lack of practical interference with the antigen wheal.[103] Subsequently it was shown that [104] the oral use of the drug did not have any decisive effect on the whealing produced on scratch tests with serial dilutions of histamine or with ragweed extract in sensitive patients. When a solution of Benadryl was mixed with the histamine or ragweed extract, or when it was applied to scratches prior to the application of these wheal-producing agents, there was a dramatic inhibition of the whealing phenomenon.[104] Other whealing, such as that due to codeine, morphine, atropine, pilocarpine, bee venom and physostigmine, was also inhibited.[105]

Urticaria.—Urticaria and angioneurotic edema were the first manifestations reported to be relieved by this drug.[106] Friedlaender and I [107] found it to be effective in the urticarial dermatoses, as well as in dermographism, in the majority of patients treated. The good results in urticaria are confirmed by a number of workers.[108] The percentage of effective results varies somewhat with different authors, but all agree that about 80 per cent of the patients are benefited. The itching is almost always relieved, while the lesions are kept in abeyance in the majority of patients, although those in a few, particularly when the swellings have been of unusual size, may not be helped. The serum sickness type of reaction, particularly that following penicillin administration and consisting primarily of urticaria, itching and arthralgia, has been benefited in most instances except for the fact that the arthralgia has been more resistant. It should be emphasized that in the cases of urticarial and "serum sickness" reactions the relief was apparent for only a few hours following each dose of the medicament and that the final course of the ailment was in no way shortened or affected by this therapy.

Dermatitis.—In acute and chronic atopic dermatitis (flexural dermatitis, neurodermatitis) relief was noted from the itching in 20 out of 25 cases.[104] Other investigators have also observed such benefit.[108f,g] While the relief was directed primarily to combating the itching, the prevention of traumatization of the skin from scratching frequently resulted in salutary effects on the inflammatory process. In contact dermatitis the results were less striking. Pronounced relief of the itching of pruritus vulvae has also been noted.[101]

Hay Fever and Vasomotor Rhinitis.—In cases of hay fever, Koelsche and his associates [109] obtained relief in 75 per cent; Logan,[108d] in 75 per cent; Eyermann,[108e] in 67 per cent; Waldbott,[108f] in 74 per cent, and Levin,[108g] in 59 per cent. McElin and Horton [108b] also described benefit in hay fever, while A. Friedlaender[108a] observed but little benefit. The results in perennial vasomotor rhinitis were described by several workers.[110] The percentage of those benefited, where stated, varied from 28 to 85. In my own series[111] of 47 cases of perennial vasomotor rhinitis, symptomatic benefit was obtained in 7 (or 15 per cent), while 28 of 54 patients (52 per cent) with seasonal hay fever were helped. Logan and his associates[108d] claimed definite symptomatic improvement in 4 cases of hyperplastic ethmoiditis, with retraction and disappearance of the polypoid tissue and diminution or disappearance of the purulent discharge. The symptoms recurred, however, when the drug was discontinued.

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[100] Loew, E R; Kaiser, M. E, and Moore, V.: Synthetic Benzhydryl Alkamine Ethers Effective in Preventing Fatal Experimental Asthma in Guinea Pigs Exposed to Atomized Histamine, J Pharmacol. & Exper. Therap **83:** 120 (Feb) 1945 Loew, E R, and Kaiser, M. E.: Alleviation of Anaphylactic Shock in Guinea Pigs with Synthetic Benzhydryl Alkamine Ethers, Proc Soc Exper. Biol & Med **58:** 235 (March) 1945.

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[102] Wells, J A; Morris, H. C, and Dragstedt, C A Modification of Anaphylaxis by Benadryl, Proc Soc. Exper. Biol & Med **61:** 104 (Feb) 1946.

[103] Feinberg, S M, and Friedlaender, S Relief of Dermographism and Other Urticarias of Histamine Origin by a Synthetic Benzhydryl Alkamine Ether, J Allergy **16:** 296 (Nov.) 1945

[104] Friedlaender, S, and Feinberg, S. M.: Histamine Antagonists. III The Effect of Oral and Local U [illegible] Benzhydryl Ether Hydrochloride on the W[illegible] ntigen Antibody Reactions, and Other Whealir [illegible] Results in Allergic Manifestations, J. Allergy 1[illegible].

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[107] Feinberg, S M: Histamine Antagonists: II. Summary of Developments in Non Specific Inhibition of Histamine, Anaphylaxis and Allergy, J Allergy **17:** 217 (July) 1946. Friedlaender and Feinberg, footnotes 103 and 104.

[108] (*a*) Friedlaender, A. S: The Use of a Histamine Antagonist, B Dimethylaminoethyl Benzhydryl Ether Hydrochloride in Allergic Disease, Am J M Sc **212:** 185 (Aug) 1946 (*b*) McElin, T. W., and Horton, B T.: Clinical Observations on the Use of Benadryl: A New Antihistaminic Substance, Proc. Staff Meet, Mayo Clin **20:** 417 (Nov. 14) 1945 (*c*) O'Leary, P A, and Farber, E M: Benadryl in the Treatment of Urticaria, ibid. **20:** 429 (Nov. 14) 1945. (*d*) Logan, S. B.: The Use of Benadryl in Treating Some Allergic Diseases of Childhood, ibid. **20:** 436 (Nov. 14) 1945 (*e*) Eyermann, C. H.: Clinical Experiences with a New Antihistaminic Drug, J. Allergy **17:** 210 (July) 1946. (*f*) Waldbott, G. L.: Clinical Results with Benadryl, ibid **17:** 142 (May) 1946 (*g*) Levin, S L.: B Dimethylaminoethyl Benzhydryl Ether Hydrochloride (Benadryl): Its Use in Allergic Diseases, ibid. **17:** 145 (May) 1946.

[109] Koelsche, G A.; Prickman, L. E, and Carryer, H. M.: The Symptomatic Treatment of Bronchial Asthma and Hay Fever with B Dimethylaminoethyl Benzhydryl Ether Hydrochloride, J. Allergy **17:** 151 (May) 1946.

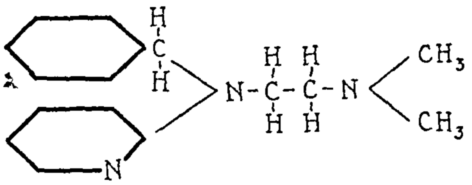
Asthma.—Asthma is not benefited materially by Benadryl, according to some observers.[112] On the other hand, Eyermann[108e] claimed good results in 65 per cent of his asthma cases; Waldbott,[108f] in 43 per cent, and Levin,[108g] in 65 per cent. Koelsche and his co-workers[109] observed that relief was obtained in a greater percentage of patients with seasonal cases than in those with perennial cases. In my series of 50 cases of asthma, mainly of perennial etiology, definite relief of symptoms was observed in only 12 per cent. Levin[108g] emphasized the fact that in asthma caused or complicated by bacterial infection Benadryl was practically without effect. In cases of migraine the observations[113] have been more limited and there are not sufficient data as yet to allow any conclusions to be drawn. While in certain instances some relief may have been obtained, in others the headaches were definitely aggravated.

Administration and Reactions.—Benadryl is usually administered orally in 50 mg. capsules. In acute conditions individual doses of 50 mg. may be taken, while for persistent symptoms doses of 50 mg. four times a day may be used. Larger doses are not tolerated well by the majority of persons. In infants 10 to 20 mg. doses have been employed, and in children up to 8 or 10 years 25 mg. doses were used. Logan[108d] has found the effective dose in infants around 2 mg. per pound (454 Gm.) of body weight. The drug has also been used parenterally. I have noted that intramuscular injections of 10 mg. were apt to produce more intense action than did oral doses of 50 mg. McElin and Horton[108b] frequently employed intravenous injections.

The most common side reactions from Benadryl are drowsiness, lassitude and dizziness. These reactions are undoubtedly closely related and may be regarded as the result of a depression of the higher centers. To some degree these symptoms are present in more than 50 per cent of persons. In many they are of a minor degree and in others this effect is lessened or lost in one or two days. Many patients, however, have sufficient sleepiness to interfere seriously with their ordinary activities, and the drug has to be discontinued. Other side effects have been dryness of the mouth and nose, hot flushes, nausea, insomnia and aggravation of an existing headache or asthma.[113]

PYRIBENZAMINE (N′PYRIDIL-N′BENZYL-N-DIMETHYLETHYLENEDIAMINE)

This compound has the structural formula:



It will be observed that pyribenzamine differs from Antergan only in the substitution of the pyridil for the phenyl ring, and from Neoantergan by the omission of the methoxy group. These slight alterations, nevertheless, suffice to modify the action of these drugs.

Pyribenzamine was found by Mayer and his associates[114] to be the most promising of a series of histamine antagonists which they studied. In experiments on asthma and convulsions produced in guinea pigs by the inhalation of histamine, it was found that the subcutaneous injection of 0.1 mg. per kilogram of body weight of pyribenzamine was as effective a preventive as 1.0 mg. per kilogram of body weight of Antergan. According to Mayer,[115] subcutaneous injection of 5 mg. per kilogram of body weight of Pyribenzamine protected against sixty to one hundred and twenty lethal doses of histamine given intravenously. In comparison with the protective effect of similar amounts of other antagonists, the figures obtained were as follows: 929 F, three lethal doses; 1571 F, four to six lethal doses; 2325 RP, eight to ten lethal doses, and 2339 RP (Antergan), forty lethal doses.

Mayer[115] also reported that a concentration of 0.02 microgram per cubic centimeter of Pyribenzamine was capable of preventing the contraction of the guinea pig intestine from histamine diphosphate in concentrations up to 1.0 microgram per cubic centimeter. Its anti-acetylcholine action was of a much lower order. Although Pyribenzamine has a definite oxytocic action its antihistaminic activity is much higher, and as a result it can be shown that 10 to 50 micrograms per cubic centimeter of Pyribenzamine prevents the histamine contraction of the guinea pig uterus. Mayer has stated further that Pyribenzamine in subcutaneous doses of 0.1 mg. per kilogram of body weight will protect guinea pigs against anaphylactic death.

It has been shown by Yonkman and his associates[116] that in the dog a dose of 3.5 mg. of Pyribenzamine per kilogram of body weight is sufficient to protect against anaphylaxis. The maximum tolerated doses of the drug, according to Yonkman,[117] are 20 mg. or more per kilogram of body weight in the guinea pig. Toxic doses produced excitation up to the point of convulsive seizure. Concentrated solutions administered hypodermically produced local necrosis of tissue. As a further pharmacologic action of Pyribenzamine, it was shown that it had an inhibiting action on histamine salivation in cats[118] and that it prevented histamine whealing in rabbits.[119]

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[110] Williams, H. L.: Use of Benadryl in the Syndrome of Physical Allergy of the Head: A Preliminary Report, Proc. Staff Meet., Mayo Clin. **20**: 434 (Nov. 14) 1945. Friedlaender and Feinberg.[104] McElin and Horton.[108b] Logan[108d] Waldbott.[108f] Levin.[108g]

[111] Feinberg, S. M.: Allergy in Practice, ed. 2, Chicago, the Year Book Publishers, Inc., 1946.

[112] Friedlaender and Feinberg, footnotes 104, 107 and 108a. McElin and Horton.[108b]

[113] Waldbott.[108f] Levin.[108g] Feinberg.[111]

[114] Mayer, R. L.; Huttner, C. P., and Scholz, C. R.: Antihistaminic and Anaphylactic Activity of Some a-Pyridinoethylenediamines, Science **102**: 93 (July 27) 1945.

[115] Mayer, R. L.: Antihistaminic Substances with Special Reference to Pyribenzamine, J. Allergy **17**: 153 (May) 1946.

[116] Yonkman, F. F.; Hays, H. W., and Rennick, B.: The Protective Action of N′-Pyridyl-N′-Benzyl-N-Dimethylethylenediamine HCL (63 C) Against Horse Serum Anaphylaxis in Dogs, Federation Proc. **4**: 144 (March) 1945.

[117] Yonkman, F. F.: Personal communication to the author.

Whealing Phenomena.—In experiments on whealing in man Friedlaender and I[120] have found that Pyribenzamine has an action similar to, and probably more potent than, that of Benadryl. This inhibiting action on whealing was best noted when a solution of the drug applied locally was effective in inhibiting the whealing phenomena of histamine, specific antigen reactions, the specific reactions in passively sensitized sites, codeine, atropine, physostigmine, pilocarpine and bee venom.

Urticarial Dermatoses.—Arbesman and his associates[121] were the first to conduct therapeutic trials with Pyribenzamine. In acute urticaria they obtained relief in 93 per cent of patients, while in chronic urticaria 75 per cent were benefited. In a series of 37 patients with urticaria and angioneurotic edema whom we[122] treated with Pyribenzamine 29, or 78 per cent, obtained satisfactory relief. The majority of our cases were of the chronic type and we saw no particular difference between the response of the acute and chronic forms of urticaria. In some instances of angioneurotic edema, particularly those with huge swellings, larger doses (100 mg.) of the drug were required. In some instances the lesions were not as well controlled as the itching. In 6 cases of the serum sickness type caused by penicillin and in 2 caused by sulfonamide compounds, relief from itching and swelling was obtained, but the arthralgia was less responsive to this medicament. Results were also obtained in urticarial dermatoses caused by barbiturate compounds. Pyribenzamine was also effective in the relief of dermographism or urticaria factitia.

Dermatitis.—Pyribenzamine was found by us to be effective in the relief of itching in acute and chronic atopic dermatitis in 16 of 20 patients: the relief of the itching and the resulting scratching frequently was responsible in producing improvement in the cutaneous lesions. However, curative action was not noted. Pruritus vulvae and pruritus ani were also controlled symptomatically. Contact dermatitis was less responsive to the drug.

Hay Fever and Vasomotor Rhinitis.—According to Arbesman and his co-workers[121] the drug produced improvement in 85 per cent of patients with seasonal hay fever and 58 per cent of vasomotor rhinitis. In our[122] group of 254 hay fever patients 210, or 82 per cent, showed benefit, while in 130 patients with vasomotor rhinitis 64 per cent were benefited. The sneezing and rhinorrhea as well as the nasal blocking were relieved. Relief with Pyribenzamine was more noticeable in those who had had desensitizing treatment. Many of the patients listed as relieved were not helped by the drug when the symptoms became more severe. Since the 1946 ragweed season was unusually mild, it is not unlikely that in more severe hay fever seasons relief obtained by use of these drugs would be less. The persistent blockage of the nose experienced by some patients at any time of the season and by others toward the end of the season was influenced little by the use of these drugs. In 2 patients with decided nasal blocking due to the rebound action from nasal vasoconstrictors, the first dose of Pyribenzamine produced dramatic relief. The patients with seasonal hay fever included those who were sensitive to grass pollen, oak pollen, fungi and ragweed. Relief was usually noted in one-half to one hour following the first dose, although in some instances benefit was apparent only after two or three doses of the drug had been taken. It was noted by Arbesman's group of investigators as well as by my associates and myself that Pyribenzamine combined with ephedrine or aminophylline frequently was more effective than any one drug alone.

Asthma.—Benefit in asthma was noted by Arbesman and his associates[121] in 46 per cent of their seasonal cases and 37 per cent of the chronic type. In our series of 121 patients with asthma or allergic bronchial cough, 34 (or 28 per cent) were definitely benefited. The practically complete and rapid relief of the asthmatic attack obtainable from the use of epinephrine hypodermically was not noted with that of Pyribenzamine orally. Where relief was present it was usually only moderate. Spasmodic allergic cough was benefited more than dyspnea. It is well to remember that the asthma accompanying hay fever was seldom prevented by the use of the drug.

Miscellaneous Conditions.—In some instances of migraine, Pyribenzamine produced some relief, but its action in these cases was by no means consistent. In acute gastrointestinal upsets from food allergy, there was indication of benefit. We have observed also that in patients undergoing specific desensitization therapy the tendency to repeated constitutional reactions evident in a select few could, for the most part, be prevented by the administration of a dose of the drug prior to the specific treatment. This, however, does not mean that the patient is relieved from all symptoms of reaction or that he is secure from reactions due to large increments of antigen. Arbesman and his associates have also noted the ability of Pyribenzamine to prevent constitutional reactions.

Side Reactions.—Reactions other than the therapeutic effects desired are fairly common, but on the whole they are neither severe nor serious. The presence or absence of reactions was recorded in 598 patients. Out of this number 127 (or 23 per cent) admitted or complained of side reactions. Drowsiness and lassitude were observed in 18 per cent; dizziness in 13 per cent; nervousness or insomnia in 10 per cent; dryness of the mouth, throat or nose in 8 per cent and palpitation in 5 per cent. Other occasional side reactions were headache, burning on urination, gastric irritation, hypotension, diarrhea and tightness in the chest. The side effects in the vast majority of instances were moderate. In a few they were sufficiently intense, however, to prevent the patient from continuing the use of the drug.

Pyribenzamine was usually administered orally in 50 mg. doses three or four times a day. In some instances 100 mg. doses were effective when the smaller doses failed. In other instances 25 mg. doses were sufficiently effective. Children tolerated proportionately higher amounts than would be expected, most of them taking 25 to 50 mg. doses. The medicament was given in tablet form, preferably not on an empty stomach. In many instances where the allergic manifestation was not continuous, individual doses were taken as needed.

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[119] Rennick, B.; Chess, D.; Hays, H. W.; Mathiesen, [illegible] R. L., and Yonkman, F. F.: The [illegible] Activity and Toxicity of N'-Py[illegible] HCL, Federation Proc. 4:133 [illegible]

[120] Friedlaender and Feinberg, footnotes 104 and 105.

[121] Arbesman, C. E.; Koepf, G. F., and Miller, G. E.: Some Antianaphylactic and Antihistaminic Properties of N'Pyridil-N'Benzyldimethyethylenediamine Monohydrochloride (Pyribenzamine), J. Allergy 17:203 (July) 1946.

[122] Feinberg, S. M., and Friedlaender, S.: Histamine Antagonists: IV. Pyribenzamine in Symptomatic Treatment of Allergic Diseases, Am. J. M. Sc., to be published. Feinberg.[111]

COMPARATIVE STUDIES

A comparative experimental and clinical study of the histamine antagonists currently proposed for clinical use was needed. We felt that these observations made on all the drugs by the same experimenters and by the same technics and standards should give valuable data. The drugs subjected to these studies were: Antergan, Neoantergan, Benadryl and Pyribenzamine.

Whealing from urticariogenic agents on the human skin was inhibited by all antagonists, but apparently Pyribenzamine and Neoantergan were the most potent in that respect.[105] Experiments were performed [123] on the effect of a standard dose (3 mg. per kilogram of body weight) of the drug in the prevention of death from histamine injected intravenously in the guinea pig. As compared with 0.4 mg. of histamine base per kilogram of body weight which was fatal to all unprotected animals, the following amounts of histamine were required to produce fatal reactions in all animals under the influence of the histamine antagonists (3 mg. per kilogram): Benadryl, 2.0 mg.; Antergan, 2.4 mg.; Pyribenzamine, 15.0 mg.; and Neoantergan, 50.0 mg. In numerous experiments with injections of histamine there was no indication that these injections conferred any degree of histamine tolerance to the animals.

Experiments on the protective effect of the various drugs in anaphylactic shock [124] have not indicated comparable differences in activity such as were found in the case of antihistaminic action. However, this phase of the work, together with studies being made on antianaphylactic and antihistaminic activity of the drugs in vitro and studies being made on toxicity will be reported at a later time.

In our therapeutic trials we employed chiefly Benadryl and Pyribenzamine. In the urticarial dermatoses, in atopic dermatitis and in the serum sickness type of reactions from penicillin and sulfonamide drugs, Benadryl and Pyribenzamine were fairly equal in their effectiveness. Occasionally one or the other was more effective. When Benadryl produced better results it was almost always in those instances where the additional sedative effect of the drug was an advantage. There were some patients who obtained inconsiderable results with Benadryl but had decided benefit from Pyribenzamine. In most of these the advantage was due mainly to the fact that larger doses of Pyribenzamine than of Benadryl could be tolerated.

The outstanding difference in clinical effectiveness between the two drugs occurred in the allergic manifestations of the respiratory tract. In perennial vasomotor rhinitis benadryl gave relief to 15 per cent of the patients, while Pyribenzamine [122] was of benefit to 64 per cent. In the seasonal hay fever series the advantage was also in favor of Pyribenzamine; 82 per cent of the patients were helped with Pyribenzamine and 52 per cent with Benadryl. In 52 patients with perennial or seasonal allergic rhinitis in whom both drugs were tried, comparisons could be made. Thirteen were helped by both. In 24 relief was obtained by the use of Pyribenzamine without any appreciable effect from Benadryl, while in 6 the Benadryl was more effective. In asthma or allergic cough Benadryl gave some measure of relief in 10 per cent, while Pyribenzamine helped 28 per cent. In 34 patients in whom a clinical comparison of both drugs was made, 23 did not obtain relief from either drug, while 4 were helped by both. In 7 who were not benefited by Benadryl, Pyribenzamine gave some relief. There was not one case that was pyribenzamine-resistant in which relief was obtained by the use of Benadryl. It should be emphasized again that with either drug the relief was not of the order usually obtained with ephedrine or epinephrine. However, in some patients who failed to respond or responded only partially to the sympathomimetic drugs, Benadryl and Pyribenzamine were of some aid.

In 44 patients with respiratory allergy, chiefly ragweed hay fever, comparison was made between the effectiveness of Pyribenzamine and Neoantergan. In 9 no response was obtained from either drug. In 11 both drugs were equally effective. In 17 the results were in favor of Pyribenzamine, while in 7 Neoantergan was favored. Doses of 100 to 200 mg. of Neoantergan were required for therapeutic effect, but toxic reactions were less frequent with this drug.

A comparison of the side effects of these two drugs gives the following impressions. More than half of the patients taking 50 mg. doses of Benadryl complain of untoward effects, among which sleepiness is the outstanding reaction. In a good many instances this complaint of lassitude or dizziness is of such magnitude as to make it impractical to continue the therapy. The side reactions from Pyribenzamine occur in less than 25 per cent of the patients and are of a milder order than those from Benadryl. Slight drowsiness is about the most commonly observed effect, but it is infrequently of the degree obtained with Benadryl. It is interesting to note that those patients who observed a sedative effect from the use of Pyribenzamine found that this effect was invariably more pronounced when Benadryl was administered. In only a relatively few was the use of Pyribenzamine contraindicated because of its side reactions. One of the greatest advantages of this drug over Benadryl is that the toleration of larger doses of Pyribenzamine (100 to 150 mg.) enables one to obtain results in some cases where the smaller doses of Benadryl (50 mg.) are not effective.

COMMENT

The general subject of the antihistaminic drugs is reviewed in several articles.[125] A new era in the field of antihistaminic and antiallergic actions is rapidly developing. There are now available drugs which experimentally can be shown to have antihistaminic and antianaphylactic efficiency and a fair degree of palliative usefulness against allergic manifestations. It should be distinctly understood that these drugs do not immunize the patient or protect him from the effects of the allergic reaction for any extensive period. To the best of our knowledge these drugs operate by competing with the liberated histamine in their attachment to the receptor cell. Therefore, the benefit is only symptomatic and lasts only for a few hours from each dose of the medicament.[126] It is important for the allergic person to continue with his allergic management and with his specific desensitizing program where indicated. It is likely that the employment of desensitization combined with the use of histamine antagonists during the stage of active allergic symptoms may be better than the use of either treatment regimen alone.

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[123] (*a*) Friedlaender, S.; Feinberg, S. M., and Feinberg, A. R.: Histamine Antagonists: V. Comparative Study of Benadryl and Pyribenzamine in Histamine and Anaphylactic Shock, Proc. Soc. Exper. Biol. & Med. **6**: 65 (May) 1946. (*b*) Friedlaender, S.; Feinberg, A. R., and Feinberg, S. M.: Comparative Antihistaminic Activity of New Ethylenediamine Drugs in the Guinea Pig, to be published.

[124] Rose, J.; Feinberg, A. R.; Friedlaender, S., and Feinberg, S. M.: Histamine Antagonists: *Comparative* Antianaphylactic Activity of New Ethylenediamine Drugs in the Guinea Pig, to be published.

[125] Code, C. F.: A Discussion of Benadryl as an Antihistaminic Substance, Proc. Staff Meet., Mayo Clin. **20**: 439 (Nov. 14) 1945. Feinberg, footnotes 107 and 111.

Although the preliminary experimental observations of others would indicate that the antagonists of histamine do not interfere with the antigen-antibody reaction or with desensitization, this question has not been conclusively settled. It is important to keep in mind that further investigation may possibly show that while the patient is being helped temporarily by one of these drugs the long term program of creating immunity may be interfered with by the same drug. The immediate side reactions from these drugs may be a handicap in their use. The remote toxic effects have not yet been sufficiently studied. In the past, the toxic reactions of new drugs in many instances have not been apparent for a considerable period after their widespread use.

The currently available histamine antagonists are not ideal. They do not work in all types of allergic manifestations, nor are they of help in all cases of any particular syndrome. The side reactions limit the size of the doses. It is likely that within the near future more potent and less toxic histamine antagonists will emerge and be able to overcome some of these difficulties. On the other hand, it must be admitted that since it is not definitely known that histamine release is the only injurious effect of the allergic reactions, even the most potent antagonists of histamine may fail to be completely effective in the relief of allergic manifestations. There is also the possibility that other means will be found to combat the problem of allergy, among which is the inhibition of the antigen-antibody reaction or the prevention of the release of toxic substances in such reactions.

In this connection it is well to realize that allergic manifestations are prone to cyclic changes and periodicities, varying from hour to hour, day to day, week to week and season to season. For this and other reasons misinterpretation is frequent in the evaluation of the efficacy of remedies in allergy. The following criteria are suggested to test the effectiveness of a symptomatic remedy in allergic disease:

1. Unquestioned relief of symptoms must be obtained on the administration of the drug on repeated occasions.
2. Recurrence of symptoms should follow the discontinuance of the medicament.
3. The relief should be obtained under sufficiently controlled conditions and under varying circumstances so that it cannot be attributed to normal fluctuations in tolerance or to external factors, such as weather or pollen concentration. (The 1946 ragweed season was unusually mild.)
4. Whenever possible (urticaria, hay fever and asthma) objective changes should confirm subjective claims.
5. Placebo medication should fail to produce relief.

SUMMARY

The recognition of the role of histamine in the mechanism of anaphylaxis and its probable role in allergy has led to various attempts to diminish the action of this poison. That an increase in tolerance to histamine cannot be expected from injections of histamine is supported by the preponderance of experimental evidence in animals and man. The enzyme histaminase lacks an inhibiting or neutralizing effect on histamine in the living animal and does not exert a specific action on anaphylaxis or allergy. The evidence for an increased tolerance to histamine and for a resulting specific antiallergic action from the injection of histamine-azoprotein is doubtful.

In the last few years histamine antagonists of various types have been tried in histamine shock, anaphylaxis and allergy. The amino acids, histidine, cysteine and arginine, were found too weak in their action and too toxic. The early French synthetic compounds proved fairly active in histamine and anaphylactic reactions but were too toxic for clinical use.

The more recent antagonists of histamine are chemically related and have some degree of clinical usefulness. These are the French compounds Antergan (N′phenyl-N′benzyl-N-dimethylethylenediamine) and Neoantergan (N-p-methoxybenzyl-N-dimethylaminoethyl *a* aminopyridine) and the American compounds Benadryl (B-dimethylamino ethyl benzhydryl ether) and Pyribenzamine (N′pyridil-N′benzyl-N-dimethylethylenediamine). Benadryl and Pyribenzamine are useful symptomatic remedies in the treatment of the urticarial dermatoses, atopic dermatitis (flexural and infantile atopic eczema), reactions to penicillin and sulfonamide, some other types of dermatitis and seasonal hay fever. In the latter syndrome the order of effectiveness of the antihistaminic drugs is: Pyribenzamine, Neoantergan and Benadryl.

The usefulness of Benadryl and Pyribenzamine against perennial vasomotor rhinitis and asthma is more limited. The evidence thus far indicates that Pyribenzamine is the more effective of the two drugs against these manifestations.

Both drugs give a high incidence of side reactions, among which sedation and drowsiness are most commonly observed. These reactions are more frequent and of greater intensity in the case of Benadryl.

The use of these histamine antagonists should be tempered with the following considerations: A cure or lasting improvement is not to be anticipated as a result of the action of these drugs; at best they exert only a temporary palliative action in allergic conditions. Many manifestations and many patients will fail to respond to them, and others will be helped by the employment of additional palliative measures. The specific allergic methods (elimination and desensitization) should not be abandoned, as at present they constitute the sole means of achieving lasting results. In addition to precautions against immediate toxic reactions, it should be remembered that the remote toxicity from these drugs has not been sufficiently ascertained up to this time.

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[126] Report of the Committee on Pharmaceuticals and Medicaments of the American Academy of Allergy, J. Allergy **17**: 325 (Sept.) 1946.

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SATURDAY, NOVEMBER 23, 1946

THE BRUTALITIES OF NAZI PHYSICIANS

On December 5 a new series of Nürnberg trials will begin, this time involving twenty-three Nazi physicians who are charged with the crime of having conducted experiments on human beings resulting in innumerable deaths. A few months ago at the request of the federal government the Board of Trustees of the American Medical Association delegated Dr. A. C. Ivy, vice president of the University of Illinois, to represent the Association in an investigation of these acts of inhumanity, as a member of a group that will present evidence at the trials. On his return to the United States Dr. Ivy made his report to the government and at the same time directed a copy to the Board of Trustees. The report was referred by the Board of Trustees to the Judicial Council of the Association, with a request that it be presented to the meeting of the House of Delegates to be held in Chicago December 9-11. Thus there will become available an official statement from the House of Delegates regarding its attitude toward the acts committed by these German physicians.

Since the earliest times society has expected of the physician a standard of conduct compatible with the nature of his profession. "The Principles of Medical Ethics" say "A physician should be 'an upright man, instructed in the art of healing.' Consequently, he must keep himself pure in character and conform to a high standard of morals, . . ."

The report of the Mission to the European Theater Concerning War Crimes of a Medical Nature showed that certain German physicians and scientists were involved in the perpetration of both nonexperimental and experimental crimes and barbarities. The nonexperimental crimes included mass killings of persons who were about to die from disease, malnutrition and old age. Poor workers were placed on a hunger diet and when they became weakened from malnutrition were killed. Mass killings were practiced to make more room in overcrowded concentration camps and prisons. Hundreds of thousands of gypsies, Poles and Russians were killed by exposure to the fumes of potassium cyanide and the intravenous injection of cresol, chloral, veronal, morphine and scopolamine as a part of the technic for exterminating other people in order to make more room for Germans. One series of murders was done to provide skeletons for an anthropological museum. Operations were done on human beings as part of the procedure in training students in surgical technics. The selection of persons to be killed was done by physicians, and the killing was done under their supervision.

These brutalities were supplemented by a series of experiments on human beings such as have never before occurred in the history of the world. Medical science has been advanced in our own country and in some other countries by experiments on human beings who volunteered for the purpose. Conspicuous were the volunteers in the transmission of yellow fever in Cuba, the prisoners in Mississippi who volunteered for experiments in pellagra and those in Colorado who volunteered for experiments with tuberculosis. During the war just ended great numbers of our soldiers volunteered for experiments with malaria, influenza and other infectious diseases. In every instance the right of the human being to determine for himself whether or not he would participate was recognized. In the American army the tradition is well established that human beings, even under military conditions, are not ordered to submit to procedures that violate the sanctity of their own persons. The medical profession of our country in accordance with its traditions would support any medical officer who would refuse to obey an order from a line officer which would violate the sanctity of any human being, if any line officer should give such an order. Neither would the American tradition require a physician to debase himself or his profession by participating in such a performance even at the behest of the highest political leaders.

The records clearly establish that certain Nazi physicians performed experiments on human subjects without their consent and with complete disregard for their human rights. These experiments were often conducted with unnecessary suffering and injury, and death was a certain outcome. Some of the experiments were sadistic and were performed by pseudoscientists and untrained personnel without adequate reason. Apparently seventy physicians and scientists were involved, although there may have been many more. Three well known scientists have been indicted, the most prominent being Dr. Sigmund Schilling, whose name has been associated with study on the blood.

The report to the Secretary of War by Dr. Ivy lists the following experiments:

1. The injection of virulent typhus into a nonimmunized control group of human subjects.

2. The introduction of living tuberculosis germs into the trachea.

3. The study of remedies for phosphorus burns of the skin.

4. The excision of the ligaments of muscles about the joint to ascertain the extent of functional impairment.

5. The shortening of a limb by the excision of a section of bone to ascertain how much bone may be removed without impairment of function.

6. The incomplete removal of a longitudinal section of bone to ascertain how much weight the remnant will support.

7. The transplantation of tissues of various types. Attempts were made to transplant legs and other organs which animal experimentation has shown to be impracticable. In one instance a piece of "hair-growing skin" was transplanted to the nose of a Jewess.

8. In several different experiments virulent germs, including the "gas gangrene" producing bacillus, were injected into the leg muscles, and various types of chemotherapeutic and surgical treatments were employed at different stages of the infection to ascertain the best treatment. In one experiment pieces of leg muscle were rendered ischemic and traumatized to render the "gas bacillus" more virulent.

9. A study was made to ascertain how best to rewarm a subject whose body temperature was reduced to a low level (75 to 80 F.) by exposure to "wet cold" (cold water) and "dry cold" (cold atmosphere). Frostbite also was produced in another series of experiments.

10. Some experiments were done in which rupture of the uterus was produced.

11. Experiments on artificial insemination with subsequent artificial abortion were performed.

12. An attempt was made to produce multiple ovulation and conception with the idea of increasing the rate of reproduction of the herrenvolk. Indecencies characterized these experiments.

13. Studies were made to ascertain how a population could be sterilized without their knowledge, so that the sterilization could be accomplished without the fact becoming available for propaganda by the enemies of the reich. Castration by ordinary methods was too open. One method under study was to place the dried juice of a plant in the food of the population. Another method under study was to expose men and women to a castration dose of x-rays while they were filling out governmental forms. A third method consisted in injecting the cavity of the uterus with a sterilizing agent during the course of a routine physical examination of the women of the population. Even the number of women that could be sterilized in one day by one assistant was estimated.

14. The pathologic changes caused by and the lethality of "war gases" were apparently studied.

15. Experiments on explosive decompression were performed. The subjects were suddenly exposed to an altitude of 40,000 feet in an altitude chamber and kept there for twenty or thirty minutes without oxygen. This, of course, killed the subjects, and then autopsies were performed at altitude to search for gas bubbles in the blood vessels and tissues.

16. The lethal effects of poisoned bullets were studied to ascertain particularly the time of onset of symptoms of poisoning and how long the person wounded by the poisoned bullet would live.

THE JOURNAL has commented previously on the experiments with frozen men in which nude young women were forced to lie next to them in an attempt to encourage recovery. The foreign correspondents of THE JOURNAL have reported investigations made by leaders of medicine in other countries which substantiate fully the list of experiments described in the Ivy report.

Obviously, all of these experiments involving brutality, torture and murder were done without any basis in any laws either of Germany or of the Hague Convention. Certainly such experiments are contrary to the laws of humanity and the ethical practices of the medical profession which have prevailed for more than twenty centuries. These experiments were done without the consent of the human beings who were the subjects; they were done frequently without any adequate scientific reason; they were done often by people not qualified, and they were done in many instances with certain knowledge that the experiments might lead to permanent disability or death. Not the slightest good has resulted to mankind from these experiments. The basic sciences and medicine languished in Germany during the period of the war more than in any other country.

Perhaps most serious of all is the failure of German medical organizations and societies to express in any manner their disapproval of these widely known experiments. Physicians have a right to expect that men trained in the traditions of medicine would refuse to participate in any way in such acts of inhumanity and brutality. In some instances the defense has been offered that these experiments were conducted under the highest authority of the German state. That cannot possibly be considered in the slightest an extenuation of the failure of these physicians to act in accordance with the principles and traditions of their profession. Robert Burns wrote many years ago "Man's inhumanity to man makes countless thousands mourn." The inhumanity of these German physicians has stirred horror and disgust among physicians of every other nation of the world. From no other medical profession has there come evidence of anything resembling these sadistic procedures perpetrated in the name of science and camouflaged by a mask of research.

POLIOMYELITIS PORT OF ENTRY

Thirty-five years have passed since Flexner,[1] after initial animal experiments, suggested that the nasal mucosa, or, more correctly, the olfactory cells and nares, constitute the normal gateway through which poliomyelitis virus gains access to the central nervous system of man. Doubt gradually developed, following failure of local applications of alum or picric acid [2] to reduce the incidence of poliomyelitis in several outbreaks. Various potential pathways of infection other than the olfactory nerves were subsequently suggested, such as entrance through the taste buds [3] or other terminals of the ninth and tenth nerves,[4] through the abdominal sympathetics [5] or through the intrinsic ganglions of the intestine, with centripetal spread through the vagus.[6]

At present agreement is almost unanimous by those who have investigated human material that the olfactory nerve system is rarely involved. Kessel and his associates,[7] for example, found virus in only one olfactory bulb out of 11 fatal cases studied. There is, however, no unanimity of opinion as to which of the other suggested ports of entry play a dominant part. Statistical evidence toward a solution of this problem has been recently reported by Faber and his associates [8] of the Department of Pediatrics, Stanford University School of Medicine.

The San Francisco pediatricians made detailed microscopic studies of lesions in the nervous system in a series of 8 fatal cases occurring during 1943 and 1944 in the San Francisco Bay area. The cases were typical, and the diagnosis was confirmed in all but 1 instance by transmission of the disease to rhesus monkeys. All the patients died between the third and the ninth day from the effects of the disease, excepting 1 patient, who died on the twenty-fifth day from perforation of the esophagus.

Faber concludes that there appears to be no single port of entry in human poliomyelitis. Almost any nerve system with peripheral endings in the mucous surfaces can, if exposed, convey the virus in a central direction to its regional ganglions and thence, if the process continues, into the central nervous system. Their limited statistical evidence suggests the following relative frequencies of primary infection: (*a*) trigeminal afferent system (fifth cranial) very frequent, (*b*) visceral afferent system (ninth and tenth cranial) fairly common but less than the fifth, (*c*) gustatory system (seventh, ninth and tenth cranial) occasional, (*d*) sympathetic systems, upper levels (pharynx, bronchial tree, upper esophagus) occasional, (*e*) sympathetic system, lower (intestine) doubtful and (*f*) vagal efferent (parasympathetic) system (ninth cranial) and olfactory (first cranial) system uninvolved.

The pharynx thus appears to be an especially favorable site for the primary penetration of poliomyelitis virus into the body. Clinically there is apparently no constant correlation between the site (or level) of the initial penetration and the site or severity of the initial paralysis.

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[1] Flexner, Simon, and Lewis, P. A.: Epidemic Poliomyelitis in Monkeys, J. A. M. A. **54**: 535 (Feb. 12) 1910.

[2] Armstrong, Charles, and Harrison, W. T.: Pub. Health Rep. **50**: 725 (May 31) 1935; **51**: 203 (Feb. 28) 1936.

[3] Drinker, C. K.: Virus and Rickettsial Diseases, Cambridge, Mass., Harvard University Press, 1940, p. 387.

[4] Goodpasture, E. W.: Am. J. Path. **1**: 29 (Jan.) 1925.

[5] Kling, C.; Levaditi, C., and Lépine, P.: Bull. Acad. Méd., Paris **102**: 158.

[6] Marinesco, G.; Manacatide, M., and Stati-Draganesco: Ann. Inst. Pasteur **43**:223 (Feb.) 1929.

[7] Kessel, J. F.; Moore, F. J.; Stimpert, F. D., and Fisk, R. T.: J. Exper. Med. **74**: 601 (Dec.) 1941.

[8] Faber, H. K., and Silverberg, Rosalie J.: J. Exper. Med. **83**:329 (April) 1946.

DIET AND MAN'S TOLERANCE TO COLD

The possibility that human tolerance to cold may be affected by diet, particularly by the water soluble vitamins, has been a matter of conjecture for many years. Recently a comprehensive study of the question has been reported [1] by a group of investigators at the University of Illinois. Twelve healthy young men were used as subjects. Experiments were conducted for a period of one hundred and fifty days to determine the effect of supplements of the water soluble vitamins to a basal diet containing only borderline amounts of ascorbic acid, thiamine, riboflavin and niacin on the ability of the subjects to withstand repeated exposure to cold. The exposure was of eight hours' duration either to intense cold (— 20 F.) with considerable protective clothing or to a cool environment (60 F.) with little protective clothing. The tolerance to cold was measured by changes in rectal and mean skin temperature and in the performance of a series of psychomotor, perceptual and intellective tests. The supplementary vitamins were alternated with placebos indistinguishable from the vitamin capsules.

After eighty-nine days the subjects fed only the basal diet did not show evidence that the diet was inadequate for normal nutrition excepting that the plasma ascorbic acid level decreased to a low value (0.2 mg. per hundred cubic centimeters) and the excretion of thiamine in the urine was reduced to a level indicative of borderline thiamine deficiency. A systematic study of the data secured from psychomotor, perceptual and intellective tests failed to reveal any consistent evidence that the vitamin levels of the basal diet were inadequate. Nor was there any discernible effect on the tolerance to cold as measured by changes in rectal and mean skin temperature, the latter varying with environmental temperatures, as has been recently emphasized.[2] The addition of the water soluble vitamins was likewise without effect on the tolerance to cold as well as on the psychomotor, perceptual and intellective tests.

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[1] Glickman, N.; Keeton, R. W.; Mitchell, H. H., and Fahnestock, M. K.: Am. J. Physiol. **146**: 538 (July) 1946.

[2] Adolph, E. F., and Molnar, G. W.: Am. J. Physiol. **146**: 507 (July) 1946.

These careful studies thus indicate clearly that the ability of man to withstand the damaging effects of repeated exposures to cold cannot be appreciably altered by giving excessive doses of ascorbic acid, thiamine, riboflavin and nicotinic acid above the amounts required for apparently normal nutrition. The possibility that the water soluble vitamins might show a favorable effect in subjects with definite avitaminosis, of course, is not answered by these experiments.

Current Comment

THE QUESTIONNAIRE ON MILITARY MEDICAL SERVICE

Pursuant to a resolution passed by the House of Delegates of the American Medical Association in December 1945, the Board of Trustees appointed a Committee on National Emergency Medical Service to undertake a critical study of the duties of medical officers during the war, with special reference to (1) opportunities for study, research and actual treatment of the sick, (2) rotation of medical assignments and (3) quasimedical duties for which technicians and specially trained enlisted personnel might replace physicians. The committee is headed by Dr. Edward L. Bortz, Philadelphia, and includes Drs. Harold S. Diehl, Minneapolis; Perrin H. Long, Baltimore; Harold C. Lueth, Omaha; O. O. Miller, Louisville, Ky.; James C. Sargent, Milwaukee, and V. C. Tisdal, Elk City, Okla., thus having in its membership men who served in the Army and Navy medical departments and civilian physicians. Several months ago the committee sent a pilot questionnaire to 1,000 former medical officers and received 470 replies, which are an indication of the great interest in this study (see Organization Section, this issue, page 719). Now the committee is distributing the questionnaire to 45,000 medical officers who have been discharged from the armed forces. The questionnaire gives opportunity for an expression by the discharged medical officer of his observations and his opinions. The Bureau of Medical Economic Research of the American Medical Association has aided in the development of the questionnaire, so that the replies can be recorded on punch cards and permit statistical data which should be of vast help to the government services concerned as well as to the physician who volunteers his services in response to the nation's call. The preparation and the circulation of this questionnaire and the counting of the replies are a difficult, costly procedure. Physicians who receive the questionnaire can cooperate best by giving careful consideration to every question and answering as promptly and completely as possible.

U. S. MILITARY MEDICINE IN WORLD WAR II

The mortality rate from wounds among the combatant forces of the United States Army in World War II was less than 3 per cent, or well under one half of that in World War I, said to be variously from 7 to 10 per cent. These truly remarkable results are usually attributed to recent scientific advances, such as the antibiotics ("miracle drugs"), blood banks, blood transfusions and blood substitutes, such as plasma or serum albumin, and the use of new narcotics and anesthetics. The credit should actually be given to factors which made these discoveries and their application possible, namely the gradual growth of medical knowledge and expertness, largely unnoticed and unheralded. What is little appreciated is that the medical progress accomplished by American medicine in the interim between the two world wars is to a great extent due to standardization of medical schools by the American Medical Association and the standardization of hospitals by the American Medical Association and the American College of Surgeons, resulting in the highest type of training for medical students and interns. Waltman Walters [1] emphasizes that there were relatively few men of preeminent ability in surgery and its specialties in the former war, whereas there were at the beginning of this war literally thousands of well trained, capable surgeons in this country, many of whom were already members of the reserve corps of the Army and Navy. Graduate medical training has also been stimulated by the creation of specialty boards. The sulfonamides and penicillin were important factors in combating infection, while blood and plasma transfusions did much to counteract shock. Of the greatest importance, however, was the organization of the medical service which made it possible to treat most wounded men within a few hours from the time their injuries were received.

CONSERVATION OF HEARING

A long range program on the conservation of hearing has been projected by a special committee of the American Academy of Ophthalmology and Otolaryngology. In addition to research on specific otologic diseases, the objectives include the testing of the hearing of school children and the establishment of state programs to encourage legislation promoting such tests. Expansion of testing programs of adults is also recommended. An important part of the program involves the promotion of education regarding the problems facing those who are hard of hearing. The establishment of hearing rehabilitation clinics in cooperation with medical schools, hospitals and already existing clinics is to be promoted. The medical profession at large can agree with the objectives defined, and its cooperation is certain.

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[1] Walters, Waltman: Surgery in Naval Warfare, National Legionnaire, November 1945.

ORGANIZATION SECTION

Washington Letter

(From a Special Correspondent)

Nov. 18, 1946.

Taft Plans to Reintroduce Bill to Provide Medical Care for the Poor

Senator Robert Taft of Ohio plans to reintroduce for consideration by the incoming Republican Congress bills he authorized to spend millions of dollars in federal funds for social welfare. The measures would give federal money to states for medical care for the poor, provide federal aid for education and finance the controversial Wagner-Ellender-Taft housing bill. The medical care bill would allot $200 million a year to the states for use in providing general medical care for the poor. To get the federal money, the states would have to set up a system by which medical care would be made available to every resident unable to pay for its cost. The federal aid for education bill would seek to insure that every school district in the United States has $40 a year to spend on the education of each child of school age. Some districts have as little as $7 a year per child, and others have as much as $150.

Crabtree Describes U. S. P. H. S. Construction Plans

Speaking for Surg. Gen. Thomas Parran, who could not attend the dedication ceremonies of the new infectious disease laboratory of the U. S. Public Health Service because of illness in his family, Dr. James A. Crabtree, deputy surgeon general, described the laboratory's great growth in ten years from small beginnings. He told of construction plans, estimated to cost between $15,000,000 and $20,000,000, for expansion of the National Cancer Institute, for actual treatment of cancer for an institute for research in mental diseases and for a national dental institute. It is planned to use at present the industrial hygiene department for joint study of radioactive isotopes in medicine and other fields with the Bureau of Standards. Dr. R. E. Dyer, director of the National Institute of Health, of which the new laboratory will be a unit, traced the sixty years of U. S. P. H. S. research. Dr. Detlev Bronk, chairman of the National Research Council, emphasized the need for government sponsored research to pioneer in new fields.

Amputee Is First Disabled Man to Be Enlisted by Army

Under a policy announced by General Eisenhower, chief of staff, an army sergeant who lost his left arm in aerial combat over Rangoon in 1944 has been the first man accepted in the program whereby 5,000 disabled veterans will be permitted to rejoin the service. The plan provides for veterans disabled in combat who meet the minimum physical standards for enlistment (with the exception of the specific disability) and who will require no more hospitalization.

Health Official Denies that Old Newspapers Carry Disease

Dr. Hobart M. Corning, superintendent of District of Columbia schools, was advised by George Ruhland, health officer, that there is no basis for the assertion of school custodial forces that handling old newspapers by children in salvage drives exposed them to contagion. Dr. Ruhland said that the common communicable diseases are rarely if ever spread by newspapers, and then only under most unusual circumstances. He said that bank tellers are not more frequently affected by diseases, although they are constantly handling paper money.

President Gives Final Approval for Nevius Tract as Veterans Hospital

Controversy over whether the Nevius tract, adjoining Arlington National Cemetery, should be used as the site of a 750 bed veterans hospital for the Washington area has ended. President Truman has signed the bill authorizing its use. Veterans administrator Omar N. Bradley and Dr. Paul R. Hawley, medical director, said that the hospital might be completed by the middle of 1948.

Coming Medical Meetings

American Medical Association House of Delegates Supplemental Session, Chicago, Dec. 9-11. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

Conference of State Secretaries and Editors, Chicago, Dec. 7-8. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Allergy, New York, Nov. 25-27. Dr. Karl D. Figley, 316 Michigan St., Toledo 2, Ohio, Secretary.

American Academy of Dermatology and Syphilology, Cleveland, Dec. 7-12. Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo, N. Y., Secretary.

American College of Surgeons, Cleveland, Dec. 16-20. Dr. Dallas B. Phemister, 40 E. Erie St., Chicago 11, Secretary.

American Society of Anesthesiologists, New York, Dec. 12. Dr. Curtiss B. Hickcox, 745 Fifth Ave., Room 1503, New York, Secretary.

National Society for the Prevention of Blindness, New York, Nov. 25-27. Mrs. Eleanor Brown Merrill, 1790 Broadway, New York 19, Executive Director.

Post Graduate Medical Assembly of South Texas, Houston, Dec. 3-5. Dr. M. B. Stokes, 229 Medical Arts Bldg., Houston, Secretary.

Puerto Rico, Medical Association of, Santurce, Dec. 13-15. Dr. Rafael A. Vilar, P. O. Box 3866, Santurce, Secretary.

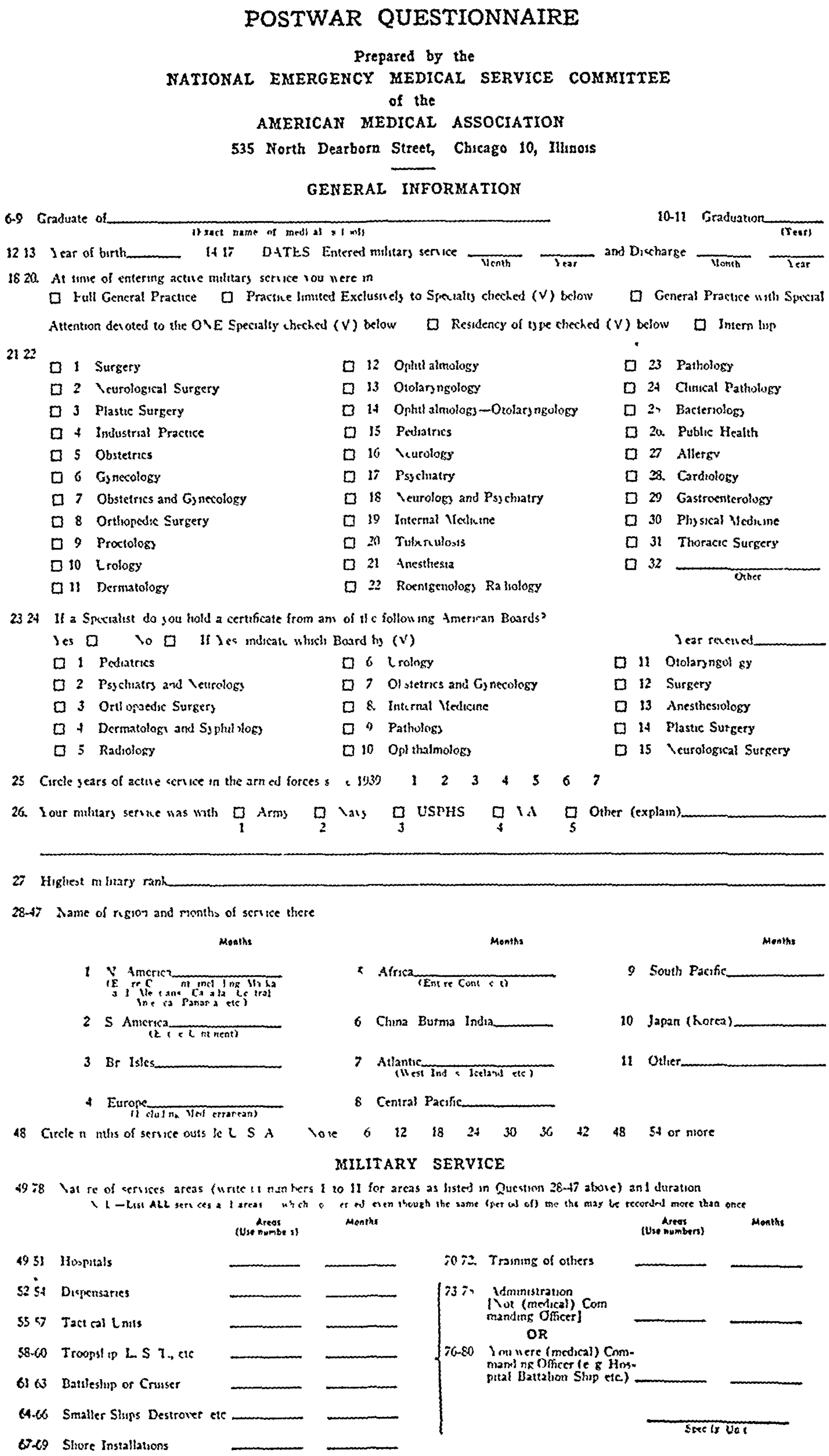
Radiological Society of North America, Chicago, Dec. 1-6. Dr. Donald S. Childs, 607 Medical Arts Bldg., Syracuse 2, N. Y., Secretary.

Southern Surgical Association, Hot Springs, Va., Dec. 10-12. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Western Surgical Association, Memphis, Tenn., Dec. 5-7. Dr. Warren H. Cole, 1853 W. Polk St., Chicago 12, Secretary.

COMMITTEE ON NATIONAL EMERGENCY MEDICAL SERVICE

Herewith is a greatly reduced facsimile of the front side of the postwar questionnaire prepared by the Committee on National Emergency Medical Service. This questionnaire has been sent to 45,000 physicians who have been discharged from the Army and Navy medical departments. The questionnaire provides opportunity to identify the physician by his qualifications and to indicate the number of years of service and the government agency with which he served. It will indicate the portion of the world in which the service was rendered and the type of unit with which the physician was associated. The controversial question as to the amount of time actually given [illegible] of his profession in the armed forces and the need for the number of physicians employed will be subjected to analysis based on the actual data. The questionnaire indicates also the kind of training received by the physician and its usefulness to him, his opinion of the nature and quality of the assignments that he received and the extent to which his professional skills were utilized. Finally, the questionnaire will indicate the extent to which he was given opportunity to keep abreast of medical advancement through various technics and his opinion as to the relative usefulness of these technics. Opportunity is given also for any physician to discuss in extenso some particular phase of his medical service if he wishes to do so.



POSTWAR QUESTIONNAIRE

Prepared by the
NATIONAL EMERGENCY MEDICAL SERVICE COMMITTEE
of the
AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street, Chicago 10, Illinois

GENERAL INFORMATION

6-9 Graduate of______________________ (Exact name of medical school) 10-11 Graduation________ (Year)

12 13 Year of birth________ 14 17 DATES Entered military service ________ (Month) ________ (Year) and Discharge ________ (Month) ________ (Year)

18 20. At time of entering active military service you were in
☐ Full General Practice ☐ Practice limited Exclusively to Specialty checked (V) below ☐ General Practice with Special Attention devoted to the ONE Specialty checked (V) below ☐ Residency of type checked (V) below ☐ Internship

21 22
☐ 1 Surgery
☐ 2 Neurological Surgery
☐ 3 Plastic Surgery
☐ 4 Industrial Practice
☐ 5 Obstetrics
☐ 6 Gynecology
☐ 7 Obstetrics and Gynecology
☐ 8 Orthopedic Surgery
☐ 9 Proctology
☐ 10 Urology
☐ 11 Dermatology
☐ 12 Ophthalmology
☐ 13 Otolaryngology
☐ 14 Ophthalmology—Otolaryngology
☐ 15 Pediatrics
☐ 16 Neurology
☐ 17 Psychiatry
☐ 18 Neurology and Psychiatry
☐ 19 Internal Medicine
☐ 20 Tuberculosis
☐ 21 Anesthesia
☐ 22 Roentgenology Radiology
☐ 23 Pathology
☐ 24 Clinical Pathology
☐ 25 Bacteriology
☐ 26 Public Health
☐ 27 Allergy
☐ 28 Cardiology
☐ 29 Gastroenterology
☐ 30 Physical Medicine
☐ 31 Thoracic Surgery
☐ 32 ____________ (Other)

23 24 If a Specialist do you hold a certificate from any of the following American Boards?
Yes ☐ No ☐ If Yes indicate which Board by (V) Year received__________
☐ 1 Pediatrics
☐ 2 Psychiatry and Neurology
☐ 3 Orthopaedic Surgery
☐ 4 Dermatology and Syphilology
☐ 5 Radiology
☐ 6 Urology
☐ 7 Obstetrics and Gynecology
☐ 8 Internal Medicine
☐ 9 Pathology
☐ 10 Ophthalmology
☐ 11 Otolaryngology
☐ 12 Surgery
☐ 13 Anesthesiology
☐ 14 Plastic Surgery
☐ 15 Neurological Surgery

25 Circle years of active service in the armed forces since 1939 1 2 3 4 5 6 7

26. Your military service was with ☐ Army 1 ☐ Navy 2 ☐ USPHS 3 ☐ VA 4 ☐ Other (explain)__________ 5

____

27 Highest military rank______________________________

28-47 Name of region and months of service there

1 N America__________ Months (Entire Continent including Alaska and Mexico, Canada, Central America, Panama etc.)
2 S America__________ (Entire Continent)
3 Br Isles__________
4 Europe__________ (Including Mediterranean)
5 Africa__________ Months (Entire Continent)
6 China Burma India__________
7 Atlantic__________ (West Indies, Iceland etc.)
8 Central Pacific__________
9 South Pacific__________ Months
10 Japan (Korea)__________
11 Other__________

48 Circle months of service outside U S A None 6 12 18 24 30 36 42 48 54 or more

MILITARY SERVICE

49 78 Nature of services areas (write in numbers 1 to 11 for areas as listed in Question 28-47 above) and duration
NOTE.—List ALL services and areas in which you served even though the same (period of) months may be recorded more than once

	Areas (Use numbers)	Months
49 51 Hospitals	________	________
52 54 Dispensaries	________	________
55 57 Tactical Units	________	________
58-60 Troopship L. S. T., etc	________	________
61 63 Battleship or Cruiser	________	________
64-66 Smaller Ships Destroyer etc	________	________
67-69 Shore Installations	________	________
70 72. Training of others	________	________
73 75 Administration [Not (medical) Commanding Officer]	________	________
OR		
76-80 You were (medical) Commanding Officer (e g Hospital Battalion Ship etc.)	________	________

____________ (Specify Unit)

Front page of postwar questionnaire.

GOVERNMENT SERVICES

ARMY

VACCINATION OF MILITARY PERSONNEL AGAINST INFLUENZA

During the fall and winter of 1946 and 1947 vaccination of military personnel against influenza will be undertaken on evidence of an incipient or beginning outbreak of the disease. The policies and procedures outlined will apply:

For Installations in Continental United States:

1. On receipt of this circular (312 W. D., Washington, Oct. 19, 1946), all camps, posts and stations will submit requisitions to the St. Louis depot for influenza virus vaccine (unit -30 cc. vial) medical catalogue number 1605900. The amount requisitioned will be calculated on the basis of thirty-eight vials per thousand troops as estimated for Dec. 1, 1946.

2. Shipment of the vaccine will be deferred until there is definite indication for vaccination and will be effected by the depot when directed by the Surgeon General. Vaccination of all military personnel will be accomplished at once on receipt of the vaccine. This method of distribution is directed because of the necessity for conserving materials and for maintaining a strategic central reserve of vaccine. Plans for orderly and expeditious vaccination of all military personnel, including ready availability of necessary equipment, will be made at all stations to insure the rapid completion of the program.

3. All suspected outbreaks of influenza occurring in a military installation or command will be immediately reported to the Surgeon General by telephone or telegraph.

4. Each army area laboratory is equipped for the performance of specific diagnostic tests for influenza A and B. On the ocurrence at any army installation of cases suspected of being influenza, acute and convalescent blood serum specimens (4-5 cc.) will be aseptically collected from each of several representative patients. From each patient selected the first or acute specimen should be obtained within forty-eight hours of the onset of illness and refrigerated. The second or convalescent specimen taken seven to ten days later should be paired with the first or acute specimen and both, properly labeled, forwarded together to the appropriate army area laboratory. These specimens need be obtained from only a limited sample (10 to 20 cases) of suspected cases early in an outbreak in order to establish the presence of influenza A or B. These tests are confirmatory only, and the report of suspected outbreaks as required in 3 should not await their outcome.

For Overseas Installations:

1. Influenza vaccine is to be requisitioned from the United States in accordance with the instructions published in War Department radios of Sept. 13, 1946. A plan should be devised to insure rapid and complete distribution of this material to all military installations should the need for vaccination arise. Each installation should be instructed to have ready the equipment necessary for the immediate and complete vaccination of all military personnel on receipt of instructions to vaccinate.

2. The decision to employ vaccination against influenza will rest with the oversea commander and will be determined by evidence of an incipient or beginning influenza outbreak. Oversea commanders will notify the Surgeon General by radio immediately when the decision to vaccinate is made and will state the indications therefor.

3. All available facilities should be utilized for the early detection and reporting of suspected outbreaks of influenza. Special radio reports should be made to the Surgeon General on the occurrence of suspected or proved outbreaks.

COMMENT

Influenza vaccination will consist of a single dose of 1 cc. of the vaccine, administered subcutaneously. Precautions will be taken to avoid administering influenza vaccine to persons sensitive to eggs. To elicit a history of egg allergy, all persons to be vaccinated should be asked if they are able to eat eggs. The vaccine should be withheld from those who answer in the negative unless further investigation rules out egg sensitivity. Record of vaccine administration should be made on WD AGO form 8-117 (Immunization Register); indication of egg sensitivity, if present, should also be entered on this form.

As indicated in the circular, influenza vaccination of army personnel during the coming season will be practiced not as a precautionary measure but as a specific control procedure to be applied if definite occasion arises. The value of influenza vaccine for the prevention of influenza A was well demonstrated in the series of controlled studies at a number of universities in 1943 and 1944 and reported in the *American Journal of Hygiene* in July 1945. It is felt that the value of vaccine for the prevention of influenza B has also been demonstrated, although quantitative data similar to that collected during the earlier trials are not available. The vaccine was used for all military personnel during the fall and winter of 1945-1946, the majority of troops having been vaccinated before the outbreak of influenza B which occurred last December. By comparison with civilian and other unvaccinated groups there can be little doubt that influenza B was present in army personnel to a considerably less extent than would have been the case had vaccination not been practiced. The observations of Francis in his article in The Journal, May 25, tend to corroborate this view.

ARMY AWARDS AND COMMENDATIONS

Brigadier General Ralph H. Goldthwaite

The Legion of Merit was recently awarded to Brig. Gen. Ralph H. Goldthwaite, M. C., U. S. Army, of Washington, D. C., "for outstanding services from August 1942 to October 1945 as commanding general, Army and Navy General Hospital, Hot Springs, Ark. He supervised the expansion of this installation and brought it to peak efficiency from the standpoint of patient care and hospital staff morale." The citation states that the great success which his efforts achieved was brought about by "superior professional ability and sympathetic understanding of the problems involved in operating this highly specialized medical center." Dr. Goldthwaite graduated from Harvard Medical School, Boston, and entered the service May 26, 1909.

Major Marcus Feinstein

The Army Commendation Ribbon was recently awarded to Major Marcus Feinstein, M. C., A. U. S., New York, whose skilful professional service rendered in connection with the care of patients and in the study of an outbreak of unusual acute respiratory disease in a bomber squadron returned from overseas contributed both to the welfare of the troops and to the early collection of essential medical data. The commendation stated that this combination of clinical and epidemiologic investigation constituted a valuable addition to knowledge. Dr. Feinstein graduated from New York Medical College, Flower and Fifth Avenue Hospitals and entered the service Nov. 14, 1942.

Colonel Earle Standlee

The Oak Leaf Cluster to the Legion of Merit was recently awarded to Col. Earle Standlee, M. C., U. S. Army, of Washington, D. C. The citation stated that "while serving as deputy surgeon, Mediterranean Theater of Operations, from June 1943 to July 1945, and chief surgeon, Mediterranean Theater of Operations, from July to October 1945, he displayed a fine sense of balance necessary between administrative and professional functions of the medical service and thoroughly and ably performed the coordination and implementation of medical policy throughout long and arduous campaigns." Dr. Standlee graduated from Baylor University College of Medicine, Galveston, Texas, and entered the service July 1, 1926.

Captain Howard J. Hartman

The Bronze Star was recently awarded to Capt. Howard J. Hartman of Waterloo, Iowa, the citation reading, in part, "for meritorious service in connection with military operations against the enemy at Toem, Dutch New Guinea, from Sept. 1 to Dec. 3, 1944. . . . While serving as ward officer in a clearing station for a task force he displayed a high standard of professional and military ability . . . his untiring efforts were an inspiration to the rest of the men in the hospital." Dr. Hartman graduated from Rush Medical School and entered the service Oct. 2, 1942.

Major Patrick M. Cmeyla

The Bronze Star Medal was recently awarded to Major Patrick M. Cmeyla, M. C., U. S. Army, of Sioux City, Iowa. The citation stated that "during eleven months' captivity in the Sendai Prisoner of War Camp No. 2, Taira, Japan, he did all within his power to alleviate the suffering of his fellow prisoners, and his performance under the most adverse conditions did much to maintain high morale among a large group of allied personnel." Dr. Cmeyla graduated from the University of Louisville School of Medicine and entered the service April 15, 1941.

Lieutenant Colonel Harold A. Abramson

The Legion of Merit was recently awarded to Lieut. Col. Harold A. Abramson, M. C., A. U. S., Cold Spring Harbor, L. I., N. Y., who as chief, physical chemical section, and assistant chief, defense material branch, Edgewood Arsenal, Maryland, from July 1942 to December 1943, carried out important research in the field of chemicals. "Displaying profound knowledge, a keen, creative mind and outstanding ability," says the citation, "he made vital contributions to the Chemical Warfare Service and thus to the war effort." Dr. Abramson graduated from Columbia University College of Physicians and Surgeons, New York, and entered the service July 11, 1942.

Captain John M. Bretz

The Bronze Star was recently awarded to Capt. John M. Bretz, M. C., A. U. S., of Huntingburg, Ind. The citation reads "For the superior service you have rendered as division medical inspector. Your inspections of the many and diverse installations under division control have been consistently excellent and have provided the staff sections concerned with information and advice essential to the completion of their various missions. The high standard of sanitation now found in all our units is in itself a tribute to your conscientious and capable work." Dr. Bretz was also awarded the Purple Heart. He is a graduate of the Indiana University School of Medicine and entered the service July 1, 1942.

Captain David M. Clough

The Bronze Star was recently awarded to Capt. David M. Clough, M. C., U. S. Army, of Los Angeles, for meritorious achievement in the performance of services during the period April 15 to October 1, 1944. "When assuming complete responsibility for the malarial control program in San Severo, Italy, area," said the citation, "he performed his task far beyond the requirement of ordinary duty, overcoming almost insurmountable difficulties relative to supply, personnel and motor transportation. Captain Clough's outstanding supervision and direction of the Italian laborers was a difficult task, being handicapped in not speaking the native language. His tenacity of purpose resulted in the eradication of all serious mosquito breeding reservoirs dangerous in this area. As a result only 1 case of malaria developed in this area during the past season. Captain Clough's initiative and organizational ability were definite contributions in protecting the health of a countless number of troops from contracting malaria. His manner of execution of his duties reflect great credit on himself and the armed forces of the United States." Dr. Clough graduated from the University of Minnesota School of Medicine in 1942 and entered the service Aug. 9, 1943.

MISCELLANEOUS

THE IMPROVED VOCATIONAL REHABILITATION PROGRAM

The director of the Office of Vocational Rehabilitation, Michael J. Shortley, Washington, D. C., has announced that the states and the federal government have set a goal of 150,000 for civilians to be rehabilitated into employment each year, almost four times the number prepared and placed in suitable occupations in any one year to date. Budgetary estimates of the states indicate that there is a minimum of 1,168,000 physically or mentally handicapped persons of working age—not including veterans with service connected disabilities—in need of vocational rehabilitation services. Every state in the Union operates a civilian vocational rehabilitation program with the assistance of the federal government, Shortley said. The state appropriations, now more than 5 million dollars a year, were increased 60 per cent the only time the state legislatures met since the Rehabilitation Act was liberalized in 1943.

The District of Columbia, Hawaii and Puerto Rico, in addition to the forty-eight states, operate vocational rehabilitation programs, and Alaska will inaugurate one soon. Separately administered programs exist for the blind in thirty-six states, and in the other states and territories the blind are provided services by the regular rehabilitation agencies. The state rehabilitation agencies prepare disabled individuals for the type of employment for which their ability and talents give them opportunity for successful employment. Shortley said "Some clients go to college, others attend business and trade schools, still others develop their skills in training on the job. All clients are medically diagnosed and, where necessary, are provided with physical restoration to remove or reduce the effects of the disability. Training is provided as needed. In each instance counseling and guidance continue until satisfactory performance on the job justifies closing the case."

The average number of rehabilitations into employment has risen from 9,100 a year before passage of Public Law 113 to more than 40,000 a year after passage, an increase of better than 400 per cent.

The amendments of 1943 to the original vocational rehabilitation act made possible the improvements in service. These amendments provided full medical, surgical and psychiatric services to remove or reduce the disability, whereas before 1943 the rehabilitation agencies had been forced to train around the disability, without attempting to alleviate it. The amendments also extended stronger federal financial support to the state agencies and thus stimulated many of them to greater activity.

The improved vocational rehabilitation program, Shortley said, is eliminating a great amount of dependence. It costs $300 to $600 a year to maintain a disabled person. It costs, on an average, $300 to rehabilitate him. Second, the program is increasing the productive manpower of the nation. About 75 per cent of the 1946 rehabilitants were unemployed at the time the states started services. About 16 per cent of the rehabilitants had never worked before.

INSTITUTE OF INTER-AMERICAN AFFAIRS

The Training Division of the Institute of Inter-American Affairs, under the direction of Dr. William W. Peter, reports that 99 public health trainees were in the United States as of October first of this year to carry on studies during the academic year 1946-1947, including 88 men and women here on regular study grants: 20 engineers, 38 doctors (2 women), 25 graduate and undergraduate nurses, 1 statistician, 1 laboratory technician, 1 hospital records clerk, 1 laundry manager and 1 dietitian. These public health trainees represent thirteen South and Central American republics: Brazil 44, Bolivia 11, Chile 6, Columbia 9, El Salvador 4, Nicaragua 4, Guatemala 6, Peru 5, Costa Rica 3, Ecuador 1, Mexico 2, the Dominican Republic 2 and Venezuela 2.

As of October 1, 559 Public Health Fellows from eighteen countries had come to the United States under the Institute of Inter-American Affairs Health and Sanitation training program since its inception, July 1, 1944.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Clark, Charles E.	Wetumpka
Clay, Richard C.	Birmingham
Dawson, Lewis M.	S. Birmingham
Delorme, Thomas L. Jr.	Birmingham
McClain, George C.	Mobile
Meissner, Tom O. W.	Birmingham
Prescott, John L.	Birmingham
Reynolds, Walter Jr.	Anniston

Arizona

Deatsch, Joseph H.	Peoria
Moon, Orville B. Jr.	Bisbee

Arkansas

Hearin, James T.	Arkadelphia
Kennedy, Jack W.	Prescott
Moore, Edwin G.	N. Little Rock
Pride, B. H.	Ft. Smith
Rector, Joe L. Jr.	Searcy
Riddler, John G.	Ft. Smith
Ross, James S.	Okolona
Strauss, Alvin W. Jr.	Little Rock
Webb, James W.	Hector

California

Albi, Piero	San Francisco
Alcorn, Chester L.	Los Angeles
Alderfer, Arthur J.	Upland
Barry, John W.	Long Beach
Buss, Paul G.	Santa Ana
Cardon, Rey L.	Los Angeles
Charvet, Leonard W.	San Francisco
Cramer, Quentin	Orange
Crockett, Joseph T.	Hayward
Davlin, Lavelle P.	Gonzales
Denlinger, Ross B.	Long Beach
Forgey, Burnell G.	Arcadia
Foster, Charles G.	San Fernando
Goddard, Paul C.	San Jose
Goodhart, Gordon E.	S. Pasadena
Googooian, Charles	Fresno
Hastings, Thomas N.	Los Angeles
Hause, Donald P.	San Francisco
Herren, Reginald R.	Los Angeles
Iverson, Preston C.	Beverly Hills
Jacobs, Byron P.	Pomona
Katz, Hilliard J.	San Francisco
Keese, Anthony V.	Pasadena
Kirtland, H. B. Jr.	San Luis Obispo
Kruse, Charles A.	Los Angeles
Langmade, Charles F.	Corona del Mar
Leary, John H.	Downey
McCoy, Carroll A.	Los Angeles
Margen, Sheldon	San Francisco
Martin, Josef R.	Santa Monica
Miller, Leo	Los Angeles
Miller, Ralph N.	Porterville
Miller, Wilbur D.	San Francisco
Monlux, Robert D.	San Francisco
Nickel, Vernon L.	Riverside
Pratt, Donald R.	San Francisco
Prestwood, August R.	San Francisco
Rife, Robert J.	Fresno
Robson, Philip G.	Campbell
Roos, John C.	Los Angeles
Stemmle, Kenneth E.	Crockett
Tilly, John T.	Orange
Wainman, Philip	Los Angeles
Wayson, Edward E.	San Francisco
Weiss, Maurice R.	Hollywood

Colorado

Absher, William K.	Denver
Dubin, Frank I.	Denver
Harris, Jack T.	Lamar
Jackson, Taylor W.	Denver
Laneback, Franklin B.	Rocky Ford
Levine, Samuel	Denver
Richard, Warren E.	Denver
Tannenbaum, Philip D.	Denver
Wenzel, Paul A.	Brighton

Connecticut

Brinkley, Sterling B.	New Haven
Jaiven, Saul J.	Stamford
Kogut, Henry V.	Bridgeport
Lieberthal, Milton M.	Bridgeport
Lubchansky, Jacob H.	Uncasville
Mark, Lester C.	Ansonia
Mitchell, Gerald V.	Milford
Narowski, John J.	Derby
Palazzo, Frank A.	Bridgeport
Pantaleo, Carl V.	New Haven
Rausch, Norman W.	W. Hartford
Soule, Robert M.	Norwalk
Veneruso, Leonard C.	Bridgeport
Waltman, Irvin G.	Hartford

District of Columbia

Holloman, John L. S.	Washington
Hoyt, Charles G.	Washington
Kartus, Irving	Washington
Marble, George H.	Washington
Weitzen, Edwin H.	Washington

Florida

Kendrick, James E.	Tallahassee
Lindeman, Frank H. Jr.	Leesburg
Miller, Clay R.	Pensacola
Robbins, Ralph	Miami Beach
Wilson, George F.	Coral Gables

Georgia

Kitchens, William C.	Augusta
Kleinman, Roy B.	Atlanta
Powell, William F.	Macon
Watters, Julian Q.	Atlanta

Idaho

Hatch, Joseph M.	Idaho Falls
McQueen, Kent	Preston

Illinois

Borgerson, Robert J.	Elmhurst
Curoso, Louis C.	Chicago
Daughaday, William H.	Winnetka
Grove, William J.	Ottawa
Gumbiner, Bernard	Chicago
Hamilton, James W.	Chicago
Hammond, Donald R.	Chicago
Hayes, Edward L.	Humboldt
Highsmith, LaRue S.	Flat Rock
Hyman, Maurice M.	Joliet
Jemsek, John	Argo
Journay, John L.	Chicago
Kerwin, Marshall D.	Chicago
Klein, Ernest S.	Chicago
Klingel, Robert L.	Belleville
Kraus, Albert P.	Chicago
Lane, John T.	Maywood
Larson, Alvin R.	Evanston
Liebross, Joseph	Chicago
Marcus, Irwin M.	*Chicago*
Mazur, Lawrence	Chicago
Minkler, Frederick C. Jr.	Evanston
Modert, Jean M.	Mt. Vernon
Moyer, John B.	La Grange
Novota, Otto J.	Chicago
Nusbaum, David	Chicago
O'Malley, Joseph W.	Ohio
Palumbo, Joseph L.	Elmwood Park
Phillips, William H.	Chicago
Pilot, Jean	Chicago
Rice, Harry E.	Waukegan
Sacks, Harold J.	Chicago
Siegel, Alfred L.	Chicago
Stern, Sidney G.	Chicago
Ungerleider, Jerome L.	Chicago
Volk, Bruno W.	Chicago
Waitkus, John P.	Chicago
Wandke, Otto E.	Chicago
Watenmaker, William M.	Chicago
Wolff, Hilburt L.	Chicago
Woody, Howard G.	Park Ridge

Indiana

Himebaugh, James R. S.	Greenwood
Huff, Stanley E.	Bremen
Kelly, William M.	Goshen
Kobrak, Heinrich G.	Gary
Logan, Richard S.	Urbana
Marlowe, John J.	East Chicago
Middleton, Thomas O.	Ridgeville
Morris, Robert A.	Rochester
Ornelas, Joseph P.	Gary
Painter, Donald S.	Garrett
Peacock, Robert C.	Dunkirk
Records, Carl J.	Indianapolis
Schafer, William C.	Decatur
Staunton, Henry A.	Fort Wayne
Sterne, John H.	Indianopolis
Tempey, Fred W.	Indianapolis

Iowa

Greenleaf, John S.	Centerville
Ivens, Milton H.	Waukon
Jacques, Lewis H.	Galva
Koester, John F.	Davenport
Kovar, Jerome D.	Sioux City
Krettek, John E.	Council Bluffs
Kriechbaum, James B.	Burlington
Kuhl, Augustus B. Jr.	Davenport
Lagen, Mansfield S.	Dubuque
Losh, Clifford W. Jr.	Des Moines
Maplethorpe, Charles W. Jr.	Toledo
Montgomery, Paul W.	Iowa City
Plager, Vernon H.	Grundy Center
Smrha, James A.	Cedar Rapids
Stewart, John K.	Clinton
Updegraff, Robert R.	Boone

Kansas

Bosilevac, Fred N.	Kansas City
Burnett, Jack M.	Pittsburg
Changus, George W.	Kansas City
Clark, Laurence A.	Rush Center
Hoberman, Morton	Leavenworth
Johnson, Charles H.	Kinsley
Lehner, Richard L.	Kansas City
Lichlyter, Moyne W.	*El Dorado*
Matson, James A.	Goodland
Menninger, William C.	Topeka
Nice, Charles M. Jr.	Parsons
Nohe, Philip C.	Kansas City
Plowman, Warren A.	Jewell
Roller, Merrill J.	Altamont
Von Leonard, George Jr.	Hutchinson
Walker, Maurice A.	Kansas City
Wilson, Donald J.	Tribune

Louisiana

Balovich, Vernon N.	New Orleans
Day, Samuel M. Jr.	Alexander City
Lipman, Werner L.	Morse
Mauterer, Oliver P.	Olla
Morris, Harry D.	New Orleans
Morrison, Harry K.	Sherburne
Slaughter, Howel W.	New Orleans
Wafer, John G. Jr.	Shreveport
Webb, Herbert M.	Lafayette

Maryland

Horvath, Peter N.	Bethesda
Kehne, John H.	Frederick
Langeluttig, Harry V.	Baltimore
McMillin, David R.	Riverdale
Mech, Karl F.	Baltimore
Miller, John E.	Sellman
Musnick, Henry	Baltimore
Phillips, Otto C.	Baltimore
Porter, Harry P. Jr.	Baltimore
Pumphrey, Albert F.	Millersville
Rhetta, Barnett M. Jr.	Baltimore
Sones, Frank M. Jr.	Baltimore
Stoner, James E. Jr.	Woodsboro
Young, Latimer G.	Baltimore

PHYSICIANS SEPARATED FROM SERVICE

Massachusetts

Cavanaugh, T. E. Jr.	W. Springfield
Cohen, Joseph P.	Newton Center
Fletcher, Kenneth S. Jr.	Chicopee
Grandfield, Robert E.	Roslindale
Guenther, Richard A.	Clinton
Hervey, Zoltan	Boston
Hooper, Francis W	Quincy
Jackson, James H	Boston
Karlsberg, Isador J	Hudson
Kennedy, John E	Adams
Lamphier, Timothy A.	Wellesly Hills
Lane, Alfred L	Boston
Latham, Raymond W	Boston
La Vigne, Richard J	Worcester
Laxson, Gerald O	Lexington
Leard, Samuel E	West Roxbury
Leclercq, George T	Boston
Ledgard, James J. Jr	Maynard
Little, Amos R. Jr	Marlboro
McGillicuddy, John J	Boston
Mansfield, James S	Boston
Mason, Mahlon R	Marblehead
Matz, Myron H	Dorchester
Mindus, Walter V	New Bedford
Minkel, Herbert P	Brighton
Morrison, John L	Boston
Myerson, Ralph M	Somerville
Paparo, Gary P	Brockton
Samson, Daniel P	Brockton
Spunt, Edward T	Holyoke
Sullivan, Arthur P	S. Braintree

Michigan

Armstrong, Theodore M	Bronson
Caldwell, James L	Ann Arbor
Jauquet, Joseph M	Sagola
Jayson, Michael H	Detroit
Kennedy, Donald J	Detroit
Kiehn, Clifford LaV	Ann Arbor
Kilmer, David N	Reed City
Knoke, F. W. Jr.	Grosse Pointe Park
Koontz, Emery R	Grand Rapids
Lange, William A	Detroit
Lannik, William M	Jackson
Levitt, Irving	Detroit
Lichtwardt, Harry E.	Highland Park
Longo, Salvatore	Eben Junction
Meeuwsen, Bernard	Grand Rapids
Meinke, Albert H. Jr	Detroit
Moorstein, Benjamin	Traverse City
Padrous, Argy N	Detroit
Reisman, David D	Detroit
Stobbelaar, Robert H.	Grand Rapids
Turner, Merald G	Davisburg
Vandenberg, Henry J. Jr.	E. Grand Rapids
Verwys, Adrian L. H. Jr.	Grand Rapids
Vining, Keats K. Jr.	Grand Rapids
Wadsworth, George H	Detroit
Weiss, Arno W	Port Hope

Minnesota

Balfour, Donald C. Jr	Rochester
Hall, Wilson B	Minneapolis
Johnson, Kenneth J	St. Paul
Katz, Louis J	St. Paul
King, Lyndon M. Jr	Minneapolis
Lueck, Wallace W	Benson
McCormick, Donald P.	S. Minneapolis
Rowe, Clarence J	St. Paul
Tarail, Robert	Minneapolis
Van Ryzin, Donald J	Duluth

Missouri

Applewhite, Calvin W	Kansas City
Byland, Benjamin F	Burlington Jct.
Harding, Herbert C	Kansas City
Klauman, Benjamin F	Kansas City
Knabb, Harris E	Springfield
Knapp, Rudolf	Golden City
Kneznekoff, Leonard	St. Louis
Kraft, Edward O. Jr.	University City
Large, Alfred McK	St. Louis
Lionberger, John R. Jr	St. Louis

Missouri—Continued

McMullen, Thomas	Tarkio
Matteson, Frank B	Parnell
Mayer, John H. Jr	Kansas City
Meyn, Werner P	St. Louis
Michaelree, John F	St. Louis
Siebert, Theodore R	St. Louis
Starkloff, Gene B	St. Louis
Stewart, John H	Gallatin
Towers, Orville W	St. Charles
Welsh, Laurence C	St. Louis

Nebraska

Ewing, John D	Omaha
Lake, Max S	Lincoln
McCullough, Charles S	Omaha
Moessner, Samuel F	Lincoln
Sindelar, Joseph B	Chappell
Squires, Robert S	Lincoln
Stone, Frank P	Omaha

New Hampshire

Foster, E.	Concord
Johnson, John M. Jr	Manchester
Laflamme, Leo A	Manchester
Lampesis, Peter T	Dover
McIntire, Percy C	Marlboro
Pratt, Howard E	Keene

New Jersey

Condit, Norman I	Maplewood
Hermann, John H. Jr	Orange
Hoffman, Abraham C	Hammonton
Iraggi, James V	Passaic
Jaffe, Benjamin	Jersey City
Judd, Joseph Jr	Elizabeth
Kallen, Arnold M	Newark
Keller, Michael L	Paterson
Kerekes, Ernest S	Passaic
Kollmar, George H	Short Hills
Kollmar, Robert	Short Hills
Koralek, Adolph H	Newark
Leibundguth, Henry	Clifton
Lloyd, Samuel J	Trenton
Loomis, Arthur H	Westfield
McKay, Robert J. Jr.	Basking Ridge
Marder, Maxwell J	Bayonne
Miller, Herman P	Newark
Mintzer, Donald W	Ocean City
Moneagle, Julius E	Madison
Moore, Harold	Paterson
Mosig, John J	Paterson
Paisley, Ellwood S	Pitman
Plancey, Melvin R	Bloomingdale
Sollami, William R	Trenton
Steinberg, Werner	Linden
Toto, Anthony N	Newark
Varhol, Joseph G	Passaic
Weiner, Herman R	Camden

New York

Atkinson, John Jr	Kenmore
Auletta, Alfred R.	Long Island City
Ayo, Corrado	New York
Bell, George R	New York
Bell, Joseph L	Brooklyn
Bikle, Charles E. Jr	Genoa
Bonventre, Martin V	Brooklyn
Bruno, Stephen F	Long Island City
Bruschi, Marco	Brooklyn
Bukanz, Seymour L	New York
Cattano, Edward L	New York
Chamberlain, George E	New York
Clark, Charles M. Jr	Long Island
Clifford, Joseph C	Gloversville
Cocuzzi, Frank A	Rochester
Delisa, Dominick A	Schenectady
Ehrenreich, Theodore	New York
Ehrlich, Samuel J	New York
Fazio, Anthony N	Brooklyn
Ficker, Robert F	Brooklyn
Fonda, Gerald E	New York
Fontanetta, Michael J	Brooklyn
Goldstein, Avram S	New York

New York—Continued

Greenberg, Abraham	Bronx
Griggs, Stewart L	Oneonta
Guest, Thomas P	Rochester
Hall, Donald W	Buffalo
Harvey, Salmon C	New York
Hauben, Richard S	New York
Irwin, John W	Endicott
Jaret, Nathan M	Middle Village
Jauernig, Russell R.	Livingston Manor
Jennings, Frank D	Brooklyn
Kaufman, Max	Jackson Heights, L. I.
Kavetsky, Philip	Brooklyn
Kazan, Avraam T	New Rochelle
Kearney, Paul I	Brooklyn
Kearns, Richard D	Fonda
Kelly, John F	Brooklyn
Kolisch, Paul DeR	Brooklyn
Kopell, Harvey P	New York
Kory, Ross C	New York
Kraft, Norman A	Brooklyn
Lassen, Werner J	New York
Lehv, Gilbert G	New York
Lerner, Samuel H	New York
Lester, David H. R	Schenectady
Leuzzi, Anthony P	Yonkers
Levin, Murray N	New York
Loomis, Frederick J	Pulaski
Loomis, Robert O	Rochester
Luttinger, Daniel	Bronx
McDonald, James E	Albany
McFadden, Cornell I	Newburgh
Marmar, William	Bronx
Marmon, Martin G	Brooklyn
Marquardt, Robert G	Binghampton
Marsh, Richard S	New York
Matchar, Joseph C	Brooklyn
Matura, Gerald C	Schenectady
Meaney, Richard V	Roslyn Heights
Meister, Alton	New York
Milgram, Joseph E	Brooklyn
Minowitz, Samuel	Brooklyn
Monto, Saul B	Whitestone
Murray, Horton L	Syracuse
Napoleon, Louis N	Brooklyn
Nichtern, Sol	New York
Pierri, Charles D	Woodside
Place, Charles H	New Rochelle
Popper, Robert	New York
Price, Carlton N	Rochester
Pullman, Theodore N	Brooklyn
Quander, Milton F	New York
Quinlan, Edward A	Port Chester
Rakow, Leonard S	New York
Rayman, Norman N	Mt. Vernon
Reilly, Philip C	Bronx
Renda, Peter L	Brooklyn
Reynolds, Ralph W	Albany
Rosanelli, Edward G	Brooklyn
Rosenstein, Joseph	Brooklyn
Schwartz, Milton J	Brooklyn
Senikowich, Michael A	New York
Shaftel, Herbert E	Brooklyn
Shelly, William P	Poughkeepsie
Sian, Jack	Bronx
Siegel, Bernard B	Far Rockaway
Simmons, Richard J	Amsterdam
Simon, Alfred J	Buffalo
Stone, Daniel J	Brooklyn
Strauss, James F	New York
Stroh, Lester	Brooklyn
Stymacin, Samuel	Forest Hills
Taus, Harold H	New York
Teracino, Nicholas F	Whitestone
Tripp, Henry S	Watertown
Trovato, Louis A	Jamestown
Vince, Tibor A	Laurelton
Wagner, Rudolph T	New York
Weisberg, Harry F	New York
Weitzner, Imre J	New York
White, Ward J	Massena
Wolfgruber, Paul J	Ebenezer
Wood, Ivan R	Mt. Morris
Wright, Arthur F	Garden City

PHYSICIANS SEPARATED FROM SERVICE

North Carolina

Anderson, William M	Cramerton
Bennett, Edmund D	Asheville
Floyd, Hal S	Fairmont
Gardner, L. I	Reidsville
Goode, Thomas V. Jr	Statesville
Kahn, Joseph W	Hayesville
Kernodle, Charles E. Jr	Elon College
Kernodle, John R	Durham
Ledesma-Diaz, Frank R	Durham
Matthews, George P	Rose Hill
Parham, Asa R	Henderson
Sitterson, Beecher W	Kenansville
Sparrow, Harry W	Greensboro
Weir, Irvin M	Bolton

North Dakota

Mahoney, James H	Tolna

Ohio

Beach, Douglas W	Springfield
Hays, James C	Camden
Henry, Jack R	Columbus
Hensler, Benton M	Cincinnati
Huckins, Rodger S	Cincinnati
Jackman, Allen W	Toledo
Jackson, Alfred E	Akron
Jacobs, William R	Cincinnati
Kahn, Raymond M	Dayton
Karson, Andrew J	Valley City
Kistner, Robert W	Cincinnati
Kohrman, Robert M	Cleveland Heights
Kupec, Joseph B	Youngstown
Landes, John S	New London
Linn, Robert F	Lakewood
Love, Duane D	Sandusky
Ludwig, Edward W	St. Clairsville
Mansfield, George H. Jr	Cuyahoga Falls
Mathias, Charles W	Niles
Moran, Joseph P. Jr	Toledo
Morrison, William H	Dayton
Oyer, Robert S	Bluffton
Pavlatos, Nicholas B	Springfield
Pollex, James H	Toledo
Priest, Robert J	Columbus
Radley, Thomas J	Cincinnati
Rath, Charles E. Jr	Wooster
Rehn, Richard J	Cincinnati
Rich, Joseph R	E. Liverpool
Rogowski, Henry F	Portsmouth
Rosenberg, Lee S	Cincinnati
Shreve, Alfred J	Alliance
Shumaker, Chauncey	Pomeroy
Spector, Horatio A	Ironton
Stull, Joseph B	Berea
Sundberg, Carol L	Springfield
Wallace, Ervin B	Columbus
Waters, William I	W. Lafayette

Oklahoma

Gerard, Rene G	Chickasha
Harris, Clyde E	Oklahoma City
Ishmael, William K	Oklahoma City
Kennedy, James R	Purcell
McLaughlin, James R. Jr	Oklahoma City
Mackey, Abner	Oklahoma City
Roys, Harvey C. Jr	Norman
Thorp, Edward M	Oklahoma City

Oregon

Long, George B	Portland
McGowan, George J	Portland
Miller, Owen G	Eugene

Pennsylvania

Caren, Raymond	Darby
Griffith, John P. Jr	Pittsburgh
Hill, Robert J	Cresson
Hoke, Bradley H. Jr	Salisbury
Kaminsky, Anthony F	Erie
Karlik, Paul Jr	Hazleton
Kaufman, Irwin L	Pittsburgh
Keim, Edward L	Davidsville
Kelchner, Clyde H	Allentown
Keller, Lynwood V	Reading

Pennsylvania—Continued

Kolinsky, Nathan S	Philadelphia
Kowalyk, Edward A	Scranton
Kramer, Morris	Easton
Lambert, Kenneth P	Kutztown
Laudenslager, Elmer C	Dublin
Layton, Robert R. Jr	Philadelphia
Lehman, Clarence Long	Palmyra
Levy, Edwin J	Philadelphia
Lorber, Stanley H	Philadelphia
McCloskey, Joseph F	Scranton
McGinty, John F. Jr	Pittsburgh
McKee, Wayne O	East McKeesport
Magalotti, Marion F	Masontown
Marconis, Joseph T	Philadelphia
Matthews, George R. Jr	York
Miller, Samuel T	Philadelphia
Miller, Stanley	Philadelphia
Milson, Thomas J	Scranton
Mori, Primo P	Vestaburg
Mulligan, Thomas M	Keiser
Nolan, John J	Aliquippa
Paul, James M	York
Policarpo, Nicholas A	Philadelphia
Quincy, James J. Jr	Easton
Rendin, Larry J	Boston
Robinson, Roy B	Pittsburgh
Salis, Herbert	Philadelphia
Sherman, Maurice J	Philadelphia
Smale, William H	Pittsburgh
Spina, Carmen M	Lyndora
Sponnoble, John D	Johnstown
Suffoletta, Daniel B	Midland
Taylor, Lawrence	Haverford
Tice, George A. H	Philadelphia
Tomsula, Joseph P	Homestead
Trimmer, John H. Jr	York
Tyson, Edward B	Southampton
Uhler, Walter M	Bethlehem
Wilson, George W	Wilkinsburg
Wilson, Loyal K	New Brighton

Rhode Island

Jaworski, Rudolf A	Central Falls
McClellan, George B	Pawtucket
Millard, Charles E	Barrington

South Carolina

McAlhany, Howard J	Branchville
Masters, Elias W	Columbia
Moore, Pierce J. Jr	Spartanburg
Nesmith, Louie E	Lake City
Page, George D	Greenwood
Singletary, Herman L	Lake City

South Dakota

Hofer, Amos A	Howard

Tennessee

Bourland, Robert L	Memphis
Butler, Richard H	Knoxville
Jones, Henry S. Jr	Memphis
Kelty, Karl C	Tiptonville
Ladd, Hu E	Kingston
Lovingood, Charles G	Maryville
Luton, Norman S	Dover
McGuffin, William L	Greenville
Miles, Robert M	Murfreesboro
Moore, William C	Rutherford
Muncy, Estle P	Harrogate
Murfree, Matthias B. Jr	Murfreesboro
Peebles, William R	Paris
Polk, James W	Troy
Reames, George E	Memphis

Texas

Etter, Richard L	Houston
Harmon, Franklin C. Jr	Floydada
Jackson, Dudley Jr	San Antonio
Jackson, Harvey K	Dallas
Jaynes, Stanley H	Galveston
Jenkins, Edward E	Sugar Land
Jensen, Andrew M	San Antonio
Kirkpatrick, Roy H	Taylor
Kochman, Walter P	Waco

Texas—Continued

Koerner, Theodore A	Gatesville
McKay, James V	Humble
Mahaffey, Cecil H	Fort Worth
Manhoff, Charles M	Galveston
Manhoff, Louis J. Jr	Galveston
Myers, Theodore B	Brady
Nixon, Robert R	San Antonio
Northington, Harold M	Egypt
Phillips, Richard J	El Paso
Pridgen, James E	Cuero
Rape, Marvin G	Ozona
Sherfill, William M	Houston
Shindler, Thomas O	Hempstead
Skarke, Edward A	Freeport
Smith, John R	Wolfe City
Snyder, Hal	Ft. Worth
Thompson, Cone J. Jr	Tyler
Thompson, James T	Port Arthur
Tyler, Joe E	Ringgold
Vanzant, Thomas J	Houston

Utah

Keyting, Walter S	Salt Lake City

Vermont

Lovell, Edgar S	Brattleboro
Pratt, William A	Rutland

Virginia

Bell, Thomas G	Staunton
Johnson Hal S	Richmond
Jones, Charles F. Jr	Lynchburg
Martin, Archibald G. M. III	Suffolk
Merrick, John B	Arlington
Powell, Rupert W	Roanoke
Psimas, George N	Charlottesville
Stamps, Edward R	Norfolk
Thweatt, James A	Petersburg

Washington

Morrison, Jack R	Seattle
Proff, Harold P	Olympia
Ramquist, Reuel T	Kirkland
Sheehy, John J	Seattle

West Virginia

Harvey, Harold E	Beckley
Marvin, Samuel L	Weirton
Miles, Howard C	Huntington
Snyder, Thomas M	Roanoke
Veach, Lysle, T	Maysville

Wisconsin

Bush, Frederick I	Fond du Lac
Gecht, Eli A	Milwaukee
Glienke, Carl F	Milwaukee
Hickey, Aloys W	La Crosse
Jewell, James H	Racine
Klaas, Frederick B	Tony
Maylahn, Donald J	Milwaukee
O'Donnell, Mae J	Madison
Sharpe, Harvey R. Jr	Fond Du Lac
Spankus, Willerd H	Shorewood
Waldkirch, Bernard P	Milwaukee
Weinstein, Alvin A	Milwaukee
Young, William P	Union Grove

Hawaii

Lau, Edward K. S	Honolulu

Puerto Rico

Garcia, A. R	Guayama
Marchand, Ernesto J	Barceloneta
Menendez-Corrada, Rodrigo G	Morovis
Pelegrina-Sariego, Ivan A	Utado
Torres, Jose M	Santurce
Valles, Hector M	Santurce

Canada

Koseruba, George M	Saskatoon

Central America

Martinez, Jose F	Republic of Honduras

MEDICAL OFFICERS RELEASED BY THE NAVY

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

Arkansas

Barnhill, Bruce B.	Corning
Berchelmann, David A.	Camden
Bradburn, Curry B. Jr.	Little Rock
Cole, J. P.	Alma
Henry, John F. Jr,	Pottsville
Kramer, Ralph G.	Fort Smith
Lenon, E. E. Jr.	Little Rock
Lovell, Ernest M. Jr.	Little Rock
Parsons, Vollie E. Jr.	Conway
Reed, Enoch F. Jr.	Pine Bluff
Robinson, Donald E.	Little Rock
Rosenzweig, Joseph L.	Lake Village
Stanton, William B.	Fort Smith
Watkins, John G. Jr.	Little Rock

Connecticut

Correll, James W.	Fairfield
Crandall, Bradford B.	Mansfield
Cunningham, David H.	Hartford
D'Elia, Pierino F.	New London
Downing, Daniel F.	New Britain
Joslin, Stuart L.	New Haven
Keating, John J.	New Milford
Kemler, Raphael L.	W. Hartford
LaPenta, Roco G.	Hartford
Manganiello, Louis O. J.	Waterbury
Nevins, John W.	Bridgeport
Olmsted, Richard W.	E. Hartford
Platt, Warren D. Jr.	Waterbury
Radowiecki, Micislaus W.	New Haven
Seronde, Joseph Jr.	Hamden
Spillane, Richard J.	Bloomfield
Wiese, Chester A. Jr.	Hartford
Witenberg, Earl G.	Middletown

Florida

Anderson, Thomas M.	Palm Beach
Donegan, Charles K.	Largo
Everett, Theodore	Chipley
Kennedy, Alpheus T.	Pensacola
Moffett, James D. Jr.	Lake Wales
Schneider, Irvin C.	Chipley
Smith, Donald W.	Miami
Smith, Lynwood B.	Tampa
Witten, Victor H.	Jacksonville

Iowa

Arnold, Keith E.	Sibley
Bogle, Warren C.	Tama
Conlon, James B.	Council Bluffs
Conry, Robert F.	Waterloo
Geiger, Ulysses S.	No. English
Gray, Charles E.	Iowa City
Griffin, Richard P.	Sheldon
Hennessey, John M.	Missouri Valley
Irvine, Paul C.	Birmingham
Little, Charles R.	Cedar Rapids

Kansas

Brooks, Robert W.	Topeka
Carlson, Carl S.	Frankford
Coyle, John F.	Coffeyville
Critchfield, Thomas W.	Effingham
Decker, Albert I. Jr.	Lawrence
Emery, Frederic B.	Seneca
Fangman, Richard J.	Witchita
Humphrey, David C.	Mound Valley
Hunzicker, Warren J.	Lawrence
Padfield, Earl G. Jr.	Salina
Petterson, Perry D.	Topeka
Pfundt, Theodore R.	Holyroad
Schmidt, Alfred F.	Canton

Kentucky

Arnold, Sidney R.	Lexington
Baker, Carl G.	Somerset
Campbell, John (Jack)	Louisville
Ganem, John F.	Louisville
Isaacs, Avron M.	Louisville
Kirchner, Walter A.	Louisville
Rollings, Rae P.	Louisville
Van Meter, Jesse O. Jr.	Jackson

Maryland

Baum, Max	Baltimore
Berman, Edgar F.	Baltimore
Cannon, Joseph P.	Baltimore
Day, Robert	Laytonsville
Ermshar, Raymond	Reisterstown
Fisher, William H. Jr.	Centreville
Geibel, Frank B. C.	Bethesda
Goldsmith, Jewett	Baltimore
Hamman, Louis Jr.	Baltimore
Kardash, Theodore	Baltimore
Larson, John D. Jr.	Bowie
Levine, Stuart C.	Baltimore
Lowitz, Irving R.	Baltimore
Lynn, William D.	Baltimore
McLean, Ross L.	Baltimore
Morris, Stanley F.	Greenbelt
Pudenz, Robert H.	Chevy Chase
Rawley, Clarence G. Jr.	Chestertown
Rhode, Charles M.	Baltimore
Rossberg, Clyde A.	Baltimore
Sadowsky, Wallace H.	North East
Scharffenberg, Wm. A.	Takoma Park
Seidel, David L.	Takoma Park
Thomas, James B.	Frederick
Truslow, John B.	Hyattsville
Watkins, Dayton O.	Hyattsville
Yaffe, Stanley N.	Baltimore

Minnesota

Amatuzio, Donald S.	Duluth
Dixon, Frank J. Jr.	St. Paul
Ellison, Adam B. C.	Rochester
Hall, Thomas N.	Grand Rapids
Hammar, Lawrence M.	Two Harbors
Haugen, George W.	Fergus Falls
Kelley, Kenneth J.	Red Lake Falls
Leitschuh, Thomas H.	Sleepy Eye
Lemon, Willia E.	Rochester
Linner, John H.	So. Minneapolis
McCarthy, Austin M.	Minneapolis
Mankey, James C.	St. Paul
Sanderson, David J.	Ah-Gwah-Ching
Schneider, John J.	Mimneapolis
Smalley, Raymond E.	Rochester
Spurbeck, George H.	Cloquet
Steensgaard, Kermit L.	Fosston
Tice, George I.	Rochester
Twiss, Alston C.	Rochester
Zaworski, Leo A.	Minneapolis

Mississippi

Brown, Henry J.	Iuka
Burnham, Charles J.	Bay Springs
Burnham, Van Robinson Jr.	Ruleville
Dravin, Isadore	Meridian
Ellis, Robert S.	Drew
Holder, Ernest J.	Prentiss
Holmes, Thomas W. Jr.	Winona
Holmes, Wendell B.	Tylertown
Johnson, Lee W. Jr.	Columbia
Kellum, Henry J. Jr.	Tupelo
Knapp, Brace I.	Picayune
Pegram, Max W.	Tupelo
Waldron, Willard L.	Water Valley

Missouri

Aiken, Richard F.	Marshall
Blasko, John J.	St. Louis
Brown, James L.	St. Louis
Eiseman, Ben	St. Louis
Graves, Arthur J.	Harrisonville
Hickerson, William H.	Kansas City
Johnson, John E.	Kansas City
Lewin, Wilbur H.	Richmond Heights
Murphy, George E.	Kansas City
O'Brien, Edward C.	St. Louis
Shatz, Burton A.	St. Louis
Shea, Robert E.	St. Louis
Tolle, Robert L.	Webster Groves

New York

Adams, William S.	Sodus
Bakst, Alvin A.	New York
Beck, Richmond J.	Huntington, L. I.
Berry, George P.	Rochester
Bliss, Harry A.	Buffalo
Bobroff, Arthur	New York
Bonnano, Salvatore V.	Long Island
Brayer, Franklin T.	Rochester
Bunnell, Chester W.	Hollis, L. I.
Calhoun, John C. Jr.	Brooklyn
Camelio, Albert P.	Rochester
Cannon, Vern E. Jr.	Elmira
Casey, Theodore A.	New York
Ciafone, Frank C.	Astoria, L. I.
Cohen, Sidney H.	Brooklyn
Cohn, George A.	Buffalo
Colombo, Antonio T.	Brooklyn
Davis, Herbert V.	Coppertown
De Polo, Edwin J.	New York
Duncan, Thomas L.	Brooklyn
Elkin, David	Brooklyn
Elkind, Maurice P.	Brooklyn
Fagan, William J.	Brooklyn
Fett, Hervert C. Jr.	Brightwaters
Flynn, Edward J.	Brooklyn
Fuchsman, Jacob J.	Bronx
Furman, Robert H.	Schenectady
Gallagher, Thomas F. Jr.	Brooklyn
Geer, Enos T. Jr.	Garden City
Geshlider, Norman A.	Brooklyn
Gilder, Rodman Jr.	New York
Gorman, Fred E.	Corning
Gotliffe, Stanley H.	Great Neck
Goulding, Allan L. Jr.	Mt. Vermon
Greenberger, Sidney	Arverne, L. I.
Hall, William A.	Belmont
Hanssen, Elif C.	New York
Hasenbush, Lester L.	New York
Heimlich, Henry J.	New York
Herlihy, Vincent P.	New York
Hirsch, Donald R.	Forest Hills
Holbert, Duncan A.	Brooklyn
Jacobus, Raymond E.	Olean
Jacobziner, Harold	Portchester
James, Melvin E.	New York
Johnston, Andrew	Utica
Juskowitz, Norman B.	Bronx
Karl, Richard C.	Pelham Manor
Katz, Lawrence	Brooklyn
Kay, Paul	Brooklyn
Koppelman, Harold	Brooklyn
Kratzman, Emil A. Jr.	Long Island
Kuhlke, John E.	Brooklyn
Lambert, Joseph J. Jr.	Woodhaven
Leversee, Beecher W.	Rexford
Levine, Harry H.	Brooklyn
McLeod, Stuart W.	Brighton
Manzella, Vincent J.	Bronx
Martin, William C.	New York
Marvin, George J.	Binghamton
Miller, Arthur	Brooklyn
Montione, John F.	Rochester
Mook, William H.	Cooperstown
Mosig, Henry	Brightwaters, L. I.
Murphy, William H.	Rockville Center
Nicosia, Arnold P.	Brooklyn
Noble, Robert P.	Riverdale
Osenkop, Richard S.	New York
Pariser, Harold P.	New York
Rashkoff, Ira A.	Bronx
Raybin, George I.	Brooklyn
Roberts, Frederick N.	Syracuse
Robins, Alvin L.	Brooklyn
Rogers, Martin C.	New York
Russell, Robert F.	Bronx
Salvia, Gaspare A.	New York
Sawyer, James D.	Dobbs Ferry
Scurti, Bernard V.	Brooklyn
Shapiro, Marvin I.	Brooklyn
Sheeran, A. D.	W. Hempstead, L. I.
Shelley, John H.	Forest Hills

MEDICAL OFFICERS RELEASED BY THE NAVY

New York—Continued

Spitzer, Stephen J..............Bronx
Stark, Raymond J.........Staten Island
Steinhorn, Paul............Ulster Co.
Stoll, Julius Jr...............Rochester
Teicher, Joseph D...........New York
Trousdell, James N..........Glen Cove
Tuttle, Elmer H..............Rochester
Tyson, Cornelius J. Jr........New York
Urban, Jerome A..............Brooklyn
Vainder, Milton.............New York
Voth, Irvin G.................Rochester
Wallace, William V...................Utica
Westfall, Stuart W................Buffalo
Wilcox, Roscoe S.............Rochester
Zeifer, Herman D............New York
Zoller, Philip A..........Richmond Hill

North Carolina

Bumgardner, Heath D..........Stanley
Davis, James E..............Goldsboro
Fowler, Richard L.........Greensboro
Harder, Frank K...........Greensboro
Harris, Russell P. Jr...........Newell
Heath, Hunter...................Kinston
Hester, Joseph M...............Wendell
Hewitt, Willard C........Elizabeth City
Hughes, Jack..............Tabor City
Hunt, William J............Thomasville
Lee, Francis B...................Monroe
Little, Joseph R...............Salisbury
Lynch, John F. Jr...................Erwin
Millard, David R. Jr.........Asheville
Parker, Edward P. III.....Camp Butner
Pound, William E...........Charleston
Taylor, George W. Jr........Mooresville
Tillery, John G.....................Wilson
Whitaker, Richard B. Jr......Whiteville
Wilkerson, Joseph L............Durham
Woodard, Marshall W..........Asheville
Wright, Isaac C..................Raleigh
Yelton, Ernest H.........Rutherfordton
Yow, Daniel E..................Concord

Ohio

Bickmore, John T...........Cincinnati
Borges, Wayne H.............Cleveland
Breytspraak, Roger W.......Middletown
Coffin, Scott F. Jr...............Mansfield
Cook, Thomas W.............Rocky River
Dew, Robert R..................Cleveland
Gallen, Joseph M...............Columbus
Gillman, Bernard D............Cincinnati
Jones, Paxton L............Youngstown
Kretchmer, Henry E..........Cleveland
Kuester, Allen E.............Cincinnati
Lede, Joseph H..................Cleveland
Moats, Dean T...................Sherwood
Mozola, Emil W..................Cleveland
Parker, Milton M..............Columbus
Pocock, Herman D. Jr......E. Cleveland
Puleo, Anthony M..................Lorain
Rampp, Richard E..............Marietta
Ruehlmann, Carl G............Cincinnati
Scheidt, John E.....................Utica
Sharts, John E. Jr................Franklin
Shea, Patrick C. Jr..........Cleveland
Ulevitch, Herman............Cleveland
Willis, Charles E. Jr..........Cleveland

Oklahoma

Boatman, Jack H.............Okmulgee
Caldwell, Charles L..............Chelsea
Chesnut, Wylie G....................Miami
Dawson, Clarence B............Muskogee
Downing, Gerald G.............Lawton
Dunn, Samuel C..................Norman
Hackney, Victor C...............El Reno
Kies, Benjamin B.................Okemah
Neal, James H. Jr.......Oklahoma City
Payne, Douglas W.............Edmond
Sanger, Walter B...................Miami
Walker, Granville I. Jr..........Hominy
Wallace, William W.........Holdenville
Winn, George J..........Oklahoma City

Pennsylvania

Arons, Henry...............Philadelphia
Beardsley, Frederick A. Jr.......Warren
Benson, Charles L......................Easton
Berger, Eugene......................Hazleton
Brzoza, Joseph J...........Philadelphia
Buchanan, James L............Houston
Burgoon, Carroll F. Jr.......Harrisburg
Burros, Harry M..........Philadelphia
Carr, John G......................Pittsburgh
Chepko, Julius..................Greensburg
Coleman, Ernest H.........State College
Colley, Alfred L.........................Sharon
Cucinotta, Salvatore..........Philadelphia
Davis, Edward W.............Norristown
DeCarlo, John Jr..........Philadelphia
Dill, James N. Jr...............McKeesport
Dixon, Harold M..........Philadelphia
Doane, Wilton A..........Philadelphia
Donaldson, William F. Jr.........Beaver
Dupertuis, Samuel M.........Pittsburgh
Eichman, Marcus E. Jr.....Philadelphia
Farkas, Robert W.........................York
Finegold, Aaron N..............Pittsburgh
Fischer, Hadwin K........Williamsport
Fitzgerald, James L. Jr...........Clarion
Fox, Joseph R............Philadelphia
Gile, John H.............Philadelphia
Gorsuch, Paul L.........Newton Square
Gough, Edward J.............Narberth
Gross, Isadore............Philadelphia
Grotzinger, P. J. G...Huntington Valley
Hall, William T................W. Chester
Hood, Robert T...................Pittsburgh
Hoskins, John R. III........W. Chester
Hudson, Robert J.................Latrobe
Kitei, Milton N............Philadelphia
Leiter, Samuel S............Philadelphia
Leskin, Joseph J............Shenandoah
Le Strange, Thomas A.......Drexel Hill
Lieberman, Alexander Jr....Philadelphia
Litzenberger, Willard A.......Bethlehem
MacMillan, Howard C. Jr.....Aliquippa
Maguire, Elliott F.........Philadelphia
Maniglia, Angelo J..............Altoona
Martin, Richard J............Drexel Hill
Rank, Frederic..........Clifton Heights
Rosenbaum, Leon Jr.........Philadelphia
Roskos, Andrew T...................Sharon
Sadler, John M....................Pittsburgh
Sausser, Eugene W.................Ashland
Sisson, Thomas R. C.......Upper Darby
Souder, Francis R..............Souderton
Starzynski, Thaddeus E.......Pittsburgh
Stewart, Charles R.........Wilkinsburg
Stiffel, Arthur..............Philadelphia
Thoroughgood, William C....Sharon Hill
Trimmer, Clifford S.................Yerkes
Walker, Leon R...........Hollidaysburg
Wenger, Christian S............Ephrata
Whitney, Leslie W............Peckville
Yamula, Stanley J.................Hazleton
Zeigler, Charles M.........Ellwood City

Texas

Adkins, Charles F..................Austin
Ameen, Ray C....................Lubbock
Anderson, Carter Jr...................Paris
Black, Gordon L....................El Paso
Bleakney, Philip A..........Harlingen
Bruce, Elmer I. Jr...............Longview
Dodd, George E. Jr.........Brownsville
Ellison, Alfred Jr......................Austin
Essin, Emmett M. Jr.............Sherman
Hutchins, Selwyn P. R...............Marlin
Jester, Albert W...................Houston
Knight, Melvin K...............Amarillo
Leonard, Russell J.................Houston
Nowierski, Leon W. Jr........Yorktown
Padgett, Harold O....................Sealy
Robinson, James E. Jr..............Temple
Schoenvogel, Clarence W.......Brenham
Selmon, Tony B....................Stamford
Walton, Thomas O. Jr......College Sta.
Wilson, Charles M...Jr.......Galveston

Virginia

Anthony, Russell A.............Staunton
Barr, William C.........Virginia Beach
Beazlie, Frank S. Jr......Newport News
Campbell, Edward M..........Abingdon
Chance, Donald P...................Hagan
Clore, Jesse N. Jr................Madison
Coleman, Ashby.................Lynchburg
Coleman, Custis L...............Richmond
Cook, Fred W. Jr..............Wellsburg
Cosby, Lewis F. Jr..............Abingdon
Crumpacker, Edgar L.....Williamsburg
Early, Julian Q.................Mt. Jackson
Etheredge, Samuel N............Norfolk
Faulkner, Donald T..........Blackstone
Foster, Merritt W. Jr.....Williamsburg
Gallant, Joseph A................Richmond
Hamilton, George R.......Williamsburg
Harrell, Gordon F....................Norfolk
Hawkins, Barry F............Wytheville
Hoffman, Robert A..............Richmond
Hutcheson, Robert S. Jr.......Lexington
Keller, Guy O.................Buena Vista
Kunkle, Herman M...........Portmouth
Lewis, John L. Jr............Alexandria
McAlpine, Robert E..........Portsmouth
Rawls, Charles H....................Suffolk
Saunders, Richard H. Jr.........Suffolk
Smith, Mason.......................Richmond
Snead, James G....................Covington
Trice, Robert P......................Richmond
Whitlock, Lee E. Jr..................Norfolk

Washington

Anderson, Richard M.........Mt. Vernon
Casterline, Ray L...............Aberdeen
Jacobson, Bert P.......................Mead
Maher, Frank M.......................Seattle
Meyers, Henry J. Jr..................Seattle
Newell, James W...................Spokane
Retter, Richard H..............Toppenish
Talbot, Robert M......................Seattle
Tuell, Stanley W....................Tacoma

Wisconsin

Barina, Henry J.........................Racine
Becker, Norman O.........Fond du Lac
Benson, Victor G.........Soldiers Grove
Brown, Frederick A................Mt. Horeb
Burchill, Philip S...............Bremerton
Carlson, David J......................W. Allis
Erickson, Donald J...............Jonesville
Flanagan, Francis J................Appleton
Foster, Thomas D......................Cornell
Gaenslen, Frederick G.........Milwaukee
Gormican, Maurice J..... ..Fond du lac
Hanson, Norbert O...................Bloomer
Hoessel, Arthur W...................Oshkosh
Hoffmann, George T..........West Allis
Holland, Homer J.......................Berlin
Kagen, Louis........................Milwaukee
Kreul, Randolph W.....................Racine
McCroskey, Robert C.........Milwaukee
Powell, Richard A....................Kenosha
Pulito, Frank J......................Milwaukee
Rubin, Phillip.........................Milwaukee
Schuster, Daniel B...............Wauwatosa
Skroch, Eugene E..............Independence
Steffan, Lloyd J.........................Malone
Waters, Darwin D....................Madison
Weber, Marshall L.................Milwaukee

Puerto Rico

Acevedo, Norberto..................Arecibo
Ayala, Angel M.........................Manati
Rodriguez-Perez, Manuel...Puerto Rico
Scarano, Jenaro G........................Ponce
Torres-Aguilar, Luis R............Caguas

Argentina

Elrick, Harold E..........Buenos Aires
Luikart, Carl B. Jr...........Argentina

Address Unknown

Embick, Richard P.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ALABAMA

First M.D. Degrees Awarded in Twenty-Six Years.—The Medical College of Alabama held its first annual commencement in Birmingham, October 25. According to Barbara Tucker, director of public relations of the medical school, representatives of the medical profession, state and national government, education and civic groups were in attendance to mark the first time in twenty-six years that M.D. degrees had been awarded in Alabama. The Medical College of Alabama opened officially June 4, 1945 with instruction in a junior class, and on October 8 of the same year the school of basic medical sciences on the university campus, established in 1920, where first and second years were given, was absorbed into the medical school. On this occasion the school of basic sciences ceased to exist. It was the direct successor in 1920 to the Medical College of Alabama at Mobile, organized in 1859. The new Medical College of Alabama was established by action of the 1943 state legislature as a division of the University of Alabama. It was located in Birmingham in 1944 by vote of a special governor's commission (THE JOURNAL, Aug. 11, 1945, p. 1116).

ARKANSAS

Henry Chenault Named Dean.—Dr. Henry C. Chenault, Hot Springs, has been appointed a vice president of the University of Arkansas and dean of the medical school, Little Rock. In the latter position Dr. Chenault will succeed Dr. Byron L. Robinson, Little Rock, who resigned, effective October 1, but who has agreed to remain with the school until January 1. Dr. Chenault graduated at Arkansas in 1927.

CALIFORNIA

Bequest for Cancer Research.—The University of California Medical School, San Francisco, will receive a bequest valued at $592,065 to carry on research for a cure of cancer. The benefaction is made possible from the estate of the late Albert C. Hooper, Palo Alto philanthropist. The University of California *Clip Sheet* reports that Mr. Hooper's uncle George Williams Hooper and his wife, Mrs. Sophronia Hooper, were responsible for the establishment at the university of the Hooper Foundation for Medical Research.

COLORADO

Grants for Research.—A grant of $3,000 was presented to Bernard B. Longwell, Ph.D., associate professor of biochemistry, University of Colorado School of Medicine, Denver, by the Ciba Company, manufacturers of pharmaceuticals and dyestuffs in New York. Dr. Longwell, in collaboration with Frank X. Gassner, D.V.M., professor of animal pathology at Colorado State College of Agriculture and Mechanic Arts, Fort Collins, is working on the possible extraction of hormones from animal feces for use in the treatment of sterility in cattle. A grant also was made to Dr. Harry H. Gordon, professor of pediatrics, by the Mead Johnson Company, Evansville, Ind. Dr Gordon is studying the metabolism of premature babies.

ILLINOIS

Citizens Vote for Health Units.—Seventeen counties in Illinois voted favorably by heavy majorities, November 5, for the inauguration of full time county health units. The seventeen counties include one four county unit and three bicounty units. The proposition was lost only in Rock Island County, it was reported. Altogether twenty-two counties have now adopted county health department laws. When organized, two thirds of the population of the state will be under full time county and municipal health service. The seventeen counties voting recently are Alexander-Pulaski (bicounty unit), Effingham, Fulton, Hardin-Pope-Massach-Johnson (multiple county unit), Lawrence-Wabash (bicounty unit), Lee, Morgan, Peoria, Piatt-DeWitt (bicounty unit), Shelby and Will.

Experimental Study in Influenza Vaccine.—The Illinois State Department of Public Health and the Universities of Illinois and Northwestern and the state normal schools at Carbondale and DeKalb are cooperating in studies to determine the value of influenza vaccine. Students at the institutes are being offered the vaccinations on a voluntary basis. A comparison of the incidence of the disease in those who accept the vaccination and those who do not will help to establish the effectiveness of the influenza vaccine. In a statement to the press, Dr. Roland R. Cross, state director of public health, said that, although the department of public health is not able to offer free influenza vaccine to all, many physicians will no doubt wish to administer it to their private patients.

Chicago

Personal.—Dr. David J. Davis, recently retired as dean of the University of Illinois College of Medicine, on November 1 was elected chairman of the Municipal Tuberculosis Sanitarium, filling the vacancy that occurred with the resignation of Dr. Frederick Tice more than a year ago. Dr. Earl E. Kleinschmidt, head of the Tuberculosis Institute of Chicago and Cook County, was named secretary. Harry Reynolds was reelected vice president and will continue to serve as business manager.

Electrocardiographic Interpretation.—A course in electrocardiographic interpretation for graduate physicians will be given at the Michael Reese Hospital Postgraduate School by Dr. Louis N. Katz, director of cardiovascular research. The class will meet each Wednesday for twelve weeks, beginning February 12. Further information and a copy of the lecture schedule may be obtained on application to the office of the dean, Michael Reese Hospital Postgraduate School.

La Rabida Sanitarium Observes Fiftieth Anniversary.—The La Rabida Jackson Park Sanitarium observed its fiftieth anniversary October 15 by launching a "research drive" aimed at discovering the cause and prevention of rheumatic fever. A fund of $37,500 was pledged or donated to carry on the study, which will be under the supervision of the sanitarium medical director, Jesse W. Hofer, Ph.D. It is hoped to establish six fellowships in the medical schools of Chicago, Northwestern, Illinois and Loyola, as well as in the laboratory of the sanitarium.

Changes in Northwestern Faculty.—Ray S. Snider, Ph.D., for twenty-six months senior pathologist and biologist with the atom bomb project at Oak Ridge, Tenn., and senior monitor and pathologist of Joint Task Force I at Bikini, has been appointed associate professor of anatomy at Northwestern University Medical School. Dr. Jules H. Masserman, assistant professor of psychiatry and research associate, Otho Sprague Institute, University of Chicago, has been named assistant professor of nervous and mental diseases and John M. Brookhart, Ph.D., assistant professor of physiology, University of Illinois College of Medicine, has been named assistant professor of neurology, effective January 1.

Research Fellowships.—The Graduate School of the University of Illinois has established four research fellowships to be awarded for one year in the fields of medicine, dentistry and pharmacy in Chicago at a stipend of $1,200 a year (calendar year with one month's vacation). Fellows are eligible for reappointment in competition with the new applicants. Candidates for these fellowships must have completed a training of not less than eight years beyond high school graduation. Candidates should indicate the field of research in which they are interested and submit complete transcripts of their scholastic credits, together with the names of three former science teachers as references. Appointments will be announced January 1 or soon thereafter each year. The fellowship year begins September 1 or July 1. Formal application blanks may be secured from the Secretary of the Committee on Graduate Work in Medicine, Dentistry and Pharmacy, 1853 West Polk Street, Chicago 12.

INDIANA

Hearing on "Diabetic Institute."—On October 12 Dr. Peter S. Kaadt, at present head of the Kaadt Institute, South Whitley, was cleared of charges of noncompliance with state hospital licensing requirements, according to the Indianapolis *News*. In answer to the charge that he had failed to obtain a license for the institute, Dr. Kaadt said he was conducting a private physician's practice and did not come under the purview of the council. Charges that he had kept bed patients in the building more than twenty-four hours and that he had been serving meals in conjunction with the treatment were termed incorrect by Dr. Kaadt. He said that practice had been discontinued when he first took charge July 31, the *News* reported. He said he did, however, make meals available for those who wished to stay. On the strength of investigation at the hearing Dr. Kaadt was advised by the Indiana Council for Hospital Licensure that, subject to the discontinuance of meal servings and the use of hospital bed facilities for treatment, he was not required to license the establishment. Charges have been levied against Dr. Charles F. Kaadt, brother of Dr. Peter Kaadt, for the administration of an alleged cure for diabetes at the institute. The Indianapolis Better Business Bureau, which has made the charges, alleges that several persons have died as a result of the treatment. Dr. Charles Kaadt, who is reported to be in Tennessee recovering from anemia (The Journal, October 5, p. 296), won a ninety day delay in the hearing of charges on maladministration of a "diabetes cure," the *Star* stated. The Indiana Council for Hospital Licensure is a new state board of health agency, created under the 1945 licensing act.

MARYLAND

Resolution Honors the Late Phillips Goldsborough.—The Maryland State Department of Health at its meeting October 24 adopted a resolution of sympathy on the death of Hon. Phillips Lee Goldsborough, acknowledging his leadership. The resolution states that during his term of office as governor he had frequent discussions with his brother, Brice W. Goldsborough of Cambridge, one of Maryland's leading practitioners and a former president of the Medical and Chirurgical Faculty of Maryland, relative to the bettering of the health conditions of the citizens of Maryland. Finally, the resolution points out, Governor Goldsborough introduced legislation some thirty years ago for the establishment of a deputy state health officer in each county. He was successful and eventually all counties had deputy state health officers assigned to them. Thanks to the wise statesmanship of Governor Goldsborough, Maryland was one of the first states in America to have full time deputy state health officers.

Reginald Archibald Named Professor of Biochemistry.—Dr. Reginald M. Archibald, associate at the Rockefeller Institute for Medical Research, New York, and special investigator at the hospital, has been appointed professor of biochemistry at the Johns Hopkins University School of Hygiene and Public Health, Baltimore, filling the vacancy created by the retirement of Elmer V. McCollum, Sc.D. Dr. Archibald will place primary emphasis on biochemistry as related to human nutrition, both in the laboratory and in actual practice. Graduate students at the school, along with Dr. Archibald and staff, will approach nutrition problems in the laboratory from the point of view of study of the influence of minerals, vitamins and hormones on the activity of enzyme systems in human beings and in organisms such as bacteria and larger parasites which infect man. This study, Dr. Archibald points out, will also call for the development of improved methods for the determination of hormones and vitamins. Mrs. Elmer V. McCollum, wife of the retired head of the department, will remain as assistant professor and will continue her work on studies of animal nutrition.

MASSACHUSETTS

Hugo Muench New Head of Biostatistics.—Dr. Hugo Muench, professor of biostatistics, Harvard University School of Public Health, Boston, has been appointed head of the department of biostatistics, it was announced November 8. Dr. Muench is also assistant dean. Dr. Muench was formerly a member of the staff of the International Health Division of the Rockefeller Foundation, New York.

The Dunham Lectures.—"Biochemical Lesions and British Anti-Lewisite" was the theme of the Edward K. Dunham Lectureship for the promotion of the medical sciences at Harvard Medical School, Boston, November 18, 20 and 22. In the series Dr. Rudolph A. Peters, Whitley professor of biochemistry, University of Oxford, England, discussed the significance of biochemical lesions, the arsenical lesion and its antidote, and clinical applications and development of BAL.

Meeting of Obstetrics and Gynecology Society.—The eighteenth annual meeting of the New England Obstetrical and Gynecological Society was held at the Hotel Somerset, Boston, October 30. Various clinics comprised the program, and speakers in an afternoon program included:

Dr. Alonzo K. Paine, Boston, The Posterior Occiput.
Dr. James C. Janney, Boston, The Doctor's Responsibility in Preparation for Marriage.
Dr. George V. S. Smith, Brookline, Discussion of Hormone Therapy in the Prevention of Miscarriage and Other Aspects of Pregnancy.

Fellowship Goes to Thomas Paine.—The American College of Physicians has awarded a research fellowship to Dr. Thomas F. Paine Jr., Cambridge, for the year beginning July 1. The fellowship provides for the continuation during this period of the study of infectious diseases, with *particular regard to* chemotherapy and the use of antibiotics, in which Dr. Paine is currently engaged at the Thorndike Memorial Laboratory, Boston City Hospital, under the supervision of Dr. Maxwell Finland. Dr. Paine graduated at Vanderbilt University School of Medicine, Nashville, in 1942. After his internship at the Strong Memorial Hospital, Rochester, N. Y., in 1943 he entered the Medical Corps, Army of the United States. From November 1945 to May 1946 Dr. Paine was assigned as Post Surgeon, CO Station Hospital, Camp Detrick, Frederick, Md., and there participated in clinical and laboratory studies of infectious diseases.

Psychiatric Department Expanded.—Boston University School of Medicine has expanded its department of psychiatry with six new appointments and one promotion. The appointments are:

Dr. John M. Murray, professor of clinical psychiatry.
Dr. George E. Gardner, associate professor of psychiatry.
Dr. Marian C. Putnam, instructor in psychiatry.
Dr. Beata Rank, assistant in psychiatry.
Dr. Benjamin Cohen, instructor in psychiatry.
Dr. Elvin V. Semrad, assistant professor in medicine (promotion).
Dr. Frederick Rosenheim, assistant professor of psychiatry.

As a part of the program of expansion the number of hours of psychiatric instruction has been more than doubled and students will begin their training in psychiatry in the first year. *Work of the department will be integrated with that of the* departments of internal médicine, surgery and pediatrics at the school of medicine and its affiliated hospitals. Students will visit the Judge Baker Center and the Children's Center as well as work in the wards with the patients.

Putnam Fellowship for Advanced Research.—Radcliffe College invities applications for the Helen Putnam Fellowship for Advanced Research. The committee on award would be interested in receiving nominations immediately from eligible women scholars who have research in progress in the field of genetics or of mental health, broadly defined. The fellowship will pay a stipend of $2,000, and the tenure of the fellowship will run for a term of eleven months from Oct. 1, 1947, with the possibility of a renewal for a similar period. All normal laboratory facilities will be provided to the holder of the fellowship. Each fellow will be assigned room and board (at cost) in one of the Radcliffe graduate houses and will be expected to be in residence during the tenure of the fellowship. No restrictions as to age will be imposed by the committee on award. In general, however, the committee will limit its choice to mature women scholars who have gained their doctorate or who possess equivalent qualifications. Applications for the award should be submitted to Radcliffe College not later than April 1, 1947 and the announcement of the appointment to the fellowship will be made on or about May 1, 1947. Application forms may be secured by addressing the Committee on the Helen Putnam Fellowship for Advanced Research, Radcliffe College, Cambridge 38, Mass.

MICHIGAN

State Medical Election.—Dr. Patrick L. Ledwidge, Detroit, was named president-elect of the Michigan State Medical Society at its recent meeting in Detroit, and Dr. William A. Hyland, Grand Rapids, was installed as president. Dr. L. Fernald Foster, Bay City, was reelected secretary.

Cancer Committee Expands.—Feeling that the time had arrived to coordinate as far as possible all cancer control activities so as to avoid duplication of effort and expense, Dr. William A. Hyland, Grand Rapids, president of the Michigan State Medical Society, has enlarged the cancer control committee this year to include the members of the Professional Executive Committee of the American Cancer Society, Michigan division, and representatives of the Michigan Department of Health. Under the chairmanship of Dr. Norman F. Miller, Ann Arbor, three subcommittees have been formed to study the *problems of lay and professional education, the collection and* disbursement of funds for cancer control and the extent of the cancer problem in Michigan together with the needs of local areas to render a more competent and adequate service to cancer patients. Dr. Frank L. Rector, a member of the Ingham County Medical Society, has been appointed as full time secretary with offices at 1313 East Ann Street, Ann Arbor. For the past five years Dr. Rector has been in charge of the cancer program of the Michigan Department of Health and has devoted most of his time to cancer education. The Michigan Department of Health has been allocated $86,000 of federal funds through the U. S. Public Health Service this year for cancer control activities in this state. The American Cancer Society, Michigan division, also will have greatly increased funds at its disposal. The cancer control committee will help plan *programs and expenditure of these funds as well as offer a* general information service on cancer problems in Michigan and elsewhere. As far as known, the Michigan State Medical Society is the first state medical society to employ a full time medically trained secretary to carry on its cancer control activities.

MINNESOTA

Students in Experiment to Study Aging Process.—The University of Minnesota, Minneapolis, is using 400 persons as voluntary "guinea pigs" to determine the process of aging of man. Half of the group will be university students between 18 and 20 years whose homes are in Minneapolis and St. Paul, while the other half are men between 45 and 60. The experiment will be under the direction of Ancel B. Keys, Ph.D.

Change in Constitution for Surgical Membership.—On October 3 the Minneapolis Surgical Society amended its constitution to read that candidates for active membership must be practicing in Minneapolis, must have graduated in 1936 or thereafter, must first be certified by the American Board of Surgery, must be fellows of the American College of Surgeons in good standing, limiting their practices to general surgery, and must have published at least one surgical paper in a resognized medical journal. The old amendment that candidates for active membership must be practicing in Minneapolis and should only be fellows of the American College of Surgeons practicing general surgery or general surgeons who have fulfilled the minimum requirements of the American College of Surgeons and are limiting their practice to surgery shall be eligible for election as active members. Both the old and the new amendments provide that the active membership should be limited to fifty.

OHIO

Appointments in Mental Hygiene.—Dr. Mark W. Garry, formerly of Milwaukee, since 1945 director of the tuberculosis division of the Ohio State Department of Health, has been appointed chief of tuberculosis and internal medicine in the division of mental hygiene, Ohio State Department of Public Welfare, effective October 16. Dr. Garry will be in charge of tuberculosis control and treatment in the institutions and will also be responsible for organizing the medical program of the institutions in the division. Miss Anna T. Lowine, R.N., director of the postgraduate school of psychiatric nursing, Menninger Sanitarium, Topeka, Kan., has been named chief of nursing service and education in the division of mental hygiene and Wallace C. Fotheringham, M.A., a member of the staff of Muskingum College, has been named chief of institutional personnel training.

Prentiss Award Goes to Mary Connolly.—The 1946 Elisabeth S. Prentiss National Award in Health Education will be presented to Miss Mary P. Connolly, Dushore, Pa., lecturer and director of health education, University of Michigan School of Public Health, Ann Arbor, for her "down to earth pioneering" in Detroit. The award committee recognized her pioneering in the organization of 15,000 women into the Mother and Daughter Council, work in the Detroit Evening Schools for the foreign born, development of health guilds (one for Negro women now has fifty-seven units in Negro churches), education for food handlers, neighborhood classes for child care, person to person education regarding venereal diseases, with pool rooms, bowling alleys and beer parlors for classrooms. Miss Connolly is one of the group instrumental in establishing and maintaining the health education institute held annually in connection with the annual public health association meeting. The presentation was announced November 13 at a dinner meeting of the American Public Health Association by Dr. William W. Peter, chairman of the National Advisory Council of the Cleveland Health Museum. November 13 was the sixth anniversary day of the museum's opening in 1940 and the tenth year since its incorporation in 1936. Elisabeth S. Prentiss, in whose honor the award was named, provided the original home and a substantial trust fund for the first health museum in America. Expanding activities due to requests from health educators throughout the world made a move to larger quarters necessary early this year (The Journal, February 16, p. 438).

WASHINGTON

New Health Department.—Bellingham and Whatcom County will probably enjoy the advantages of a full time health department by January 1 as the result of recent action by the city council and county commissioners, it is reported. A $60,000 budget is planned for the new department, which will replace the two part time departments now operated by the city of Bellingham and Whatcom County. The staff, to be headed by a full time health officer trained in public health, will total eighteen persons and include a nursing supervisor and nine public health nurses. Dr. Harrison Garner Wright is head of the present Whatcom County Health Department, while Dr. Calvin L. Longstreth is Bellingham city health officer.

The Health Commentator.—The Washington State Department of Health, Seattle, on October 15 brought out the *Health Commentator* as its official bulletin. Howard W. Lundy, Dr.P.H., is editor and Seymour Standish Jr. managing editor of the monthly bulletin.

State Medical Election.—Dr. Albert J. Bowles, Seattle, was chosen president-elect of the Washington State Medical Association at its recent meeting and Dr. Ross D. Wright, Tacoma, was installed as president. Other officers are Dr. Alexander H. Peacock, Seattle, vice president, and Dr. Harold E. Nichols, Seattle, secretary treasurer.

ALASKA

Health Departments Established.—The Anchorage City Council passed the first ordinance to create a city health department. On July 1 the city's health budget was increased and supplemented by funds from the Territorial Department of Health. It now provides for a full time sanitarian and an increase in the nursing staff from two to three nurses. In August the city of Fairbanks appointed its first medical health officer. This office in the past has been held by the chief of police. The venereal disease clinics, formerly conducted by a medical officer from the nearby army post, were moved to the city's health center. Monthly immunization clinics have also been added to the city's health services. The Juneau health center, which formerly occupied a small room in the Territorial Building, has been moved to a separate building with the aid of the Juneau Health Council.

GENERAL

Grant Aids Expansion of Journal.—The American Foundation of Tropical Medicine has obtained $3,800 to enlarge its journal temporarily. The bulk of the money, $3,000, was a grant from the Coolidge Foundation and will allow the publication to use a considerable number of papers concerning observations on the tropical diseases during World War II.

Special Society Election.—Dr. Clarence E. Van Epps, Iowa City, was chosen president of the twenty-fifth anniversary meeting of the Central Neuropsychiatric Association at its meeting in Denver, October 4-5. Other officers include Dr. Jack R. Ewalt, Galveston, vice president, Dr. William C. Menninger, Topeka, secretary-treasurer, and Dr. Abram E. Bennett, Omaha, counselor.

Proctologic Prize Goes to Harold Courtney.—The American Proctologic Society has awarded its annual Hermance Award to Dr. Harold Courtney, Syracuse, for "an outstanding scientific paper in the field." The paper was entitled "The Posterior Levator Space: Its Relation to Postanal Infections" and was presented before the 1946 session of the society at its meeting in San Francisco in June.

Accruals of Blood Service for Voluntary Hospitals.—On October 7 the trustees of the Blood Transfusion Association voted to make use of accruals resulting from the operation of the blood bank to provide the voluntary hospitals using the service with blood free of charge for indigent patients requiring transfusions. For the first months 150 units of blood have been placed at the disposal of the hospitals for this purpose. The Blood Transfusion Association, of which Dr. DeWitt Stetten is president, has offices at 2 West 106th Street, New York 25.

Council of Jewish Tuberculosis Institutions Dissolved.—The National Council of Jewish Tuberculosis Institutions was dissolved as of November 1. Communications regarding the individual member institutions should be sent direct to them at the following addresses:

Ex-Patients' Tubercular Home of Denver, 8000 East Montview Boulevard, Denver.
National Jewish Hospital at Denver, 3800 East Colfax Avenue, Denver.
Jewish Consumptive Relief Association, 208 West 6th Street, Los Angeles 14.
Committee for Care of Jewish Tuberculous (Altro Work Shops), 71 West 47th Street, New York.
Deborah Sanatorium, Browns Mills, N. J.
Winfield Sanatorium, Winfield, Ill.
Montefiore Hospital for Chronic Diseases, Gun Hills Road, New York.
Montefiore Hospital Country Sanatorium, Bedford Hills, New York.

Graduate Course for American Physicians.—Dr. Julian Landman, 62 Queen Anne Street, London, England, arrived in New York October 21 to arrange postgraduate courses in London for American physicians. Dr. Landman's address while in New York is care of the City Farmers Bank Trust Company, 22 William Street. According to a communication from

Dr. Landman arrangements have been made with postgraduate hospitals and teachers in London to provide postgraduate tuition in clinical medicine, surgery, ophthalmology and ear, nose and throat diseases. For these general courses there will be vacancies for about fifty members during each of the months of May, June, July, August and September 1947. In correspondence to the editor, the *British Medical Journal*, September 7, page 345, published a letter from Dr. Landman discussing the proposed postgraduate courses.

Lasker Awards.—Presented to the American Public Health Association by the Albert and Mary Lasker Foundation, the first series of Lasker Awards for advances made during the past five years were presented at the seventy-fourth meeting of the public health association in Cleveland, November 12. The awards consist of five individual awards of $1,000 each together with a gold statuette of the Winged Victory of Samothrace, symbolizing a victory in the fight against disease and death. During the deliberations of the awards committee it became evident that methods of medical research are changing to such an extent that the manner of recognition must be changed or broadened. Some important discoveries in medicine in the past few years were not the work of a single man but of large groups of men and women working together against time to solve a specific problem. For that reason the committee decided to add five group awards to the originally planned individual awards. These awards are in the form of a citation and a Winged Victory statuette in silver presented to the administrative leader of the group. As in the case of the individual awards, these statuettes will be suitably inscribed on the base. The first individual award winner is Dr. Carl F. Cori, St. Louis, for contributions to our knowledge of carbohydrate embolism culminating in the clarification of insulin action. Dr. John F. Mahoney, a senior surgeon, U. S. Public Health Service, stationed at the U. S. Marine Hospital, Staten Island, N. Y., received an award for research into the penicillin treatment of syphilis. Dr. Mahoney is credited with publishing three years ago the first account of the use of penicillin in the treatment of syphilis. One award went to three men jointly who were responsible for the discovery of the Rh factor. These recipients are the late Dr. Karl Landsteiner, the honor to be received by his son Ernest; Dr. Philip Levine, Plainfield, N. J., director of the biologic division, Ortho Research Foundation, Linden, N. J., and Dr. Alexander S. Wiener, Brooklyn. Dr. Alfred N. Richards, professor of pharmacology, University of Pennsylvania School of Medicine, Philadelphia, received the award for his work in World War II as chairman of the committee on medical research of the U. S. government's Office of Scientific Research and Development. Dr. Fred L. Soper, associate director of the international health division, Rockefeller Foundation, received the fifth of the individual Lasker awards for his successful fight against malaria and yellow fever. In presenting the Lasker group awards the committee had some difficulty in getting representatives of the five groups to accept the awards. In each case the director of the group felt that no one man was in a position to accept such an honor, for the contribution that had been made was a result of the combined efforts of many men and women working together. However, representatives of the groups were prevailed on finally to accept the silver statuette. The first group to receive a silver statuette is the Bureau of Entomology and Plant Quarantine of the United States Department of Agriculture for its work in controlling insect borne diseases and particularly for its research on DDT. Fred C. Bishopp, Ph.D., assistant chief of the bureau, will accept the award in the name of the group. The Army Epidemiological Board is the second winner of a Lasker group award for its work in the control of infectious diseases, one aspect of which was its development of an effective vaccine against influenza. Dr. Francis G. Blake, dean of the Yale University School of Medicine, New Haven, was the chairman of the group and will accept the award. The National Institute of Health of the U. S. Public Health Service is the third winner of a Lasker group award. This organization is the research laboratory of the U. S. Public Health Service. Dr. Rolla E. Dyer, director of the institute, will accept the award for the group. The Northern Regional Research Laboratory of the Department of Agriculture is the recipient of the fourth Lasker group award, being given for studies leading to the mass production of penicillin. Dr. Guido E. Hilbert, present director of the laboratory, will accept the award for this group. The final Lasker group award went to the Board for the Coordination of Malarial Studies for its work leading to the development of new and effective agents for the prevention of malaria.

CANADA

New Professor of Gynecology at Toronto.—Dr. Herman B. Van Wyck, Toronto, Ont., has been appointed professor of gynecology and obstetrics at the University of Toronto Faculty of Medicine, succeeding Dr. William A. Scott, who is retiring. Dr. Scott will continue in private practice and as main board examiner in the medical council of Canada.

University News.—Louis B. Jaques, Ph.D., has resigned from the department of physiology, University of Toronto Faculty of Medicine, Ontario, to become professor and head of the department of physiology, University of Saskatchewan, Saskatoon, Canada. The medical school has been reorganized and will from now on give a full four year course.

Grant for Research in Endocrinology.—A grant of $47,000 has been made to the Institute of Experimental Surgery and Medicine, University of Montreal, Quebec, to assist in the work of Dr. Hans Selye, who recently organized the department of endocrine research as professor and director of the institute. Dr. Selye, whose work has been concentrated on the steroid field, received his M.D. at the University of Prague in 1929. In 1931 he worked in the department of biochemical hygiene at the Johns Hopkins University School of Medicine, Baltimore, under a Rockefeller research fellowship.

The Charles Mickle Lecture.—Bernardo A. Houssay, professor of physiology, University of Buenos Aires, delivered the annual Charles Mickle Lecture, September 19, on "Alloxan Diabetes." Dr. Houssay delivered the lecture in his holding of the Charles Mickle Fellowship, which he was awarded in 1945. The fellowship is given annually by the University of Toronto Faculty of Medicine to "that member of the medical profession who is considered by the council of the faculty of medicine to have done most during the preceding ten years to advance sound knowledge of a practical kind in medical art or science."

Immunization Week.—The Health League of Canada announced that the fourth National Immunization Week was observed during the week beginning September 29. The league reports that there was an improvement in the general overall health picture in Canada. For instance, there were 2,786 cases of diphtheria in 1945 against 3,211 in 1944, 11,928 cases of scarlet fever against 20,945 and 12,192 cases of whooping cough against 12,382. Statistics on deaths are available for only the first nine months of 1945, and, with the exception of whooping cough, the fatality rate from these particular diseases also shows a drop. However, there were 325 whooping cough deaths in the first nine months of 1945 compared with 333 for all of 1944.

CORRECTION

Woman's Medical College of Pennsylvania.—In the State Board Number of The Journal, May 11, 1946, page 111, the percentage of failures of graduates of the Woman's Medical College of Pennsylvania before medical licensing board examinations was reported as 15.0. One candidate was successful in New York but applied too late for the anatomy and physiology examination and was reported among the failures. In computing the state board statistics the procedure is to omit incomplete examination results. Thus the percentage of failures for this school should have been 10.5. Of the 19 graduates examined, 2 failed.

Marriages

James Austin Davis Jr., Bessemer, Ala., to Miss Mary Katherine Pappandreou of Fredericksburg, Va., July 1.

Kenneth Hill Herbert, Mount Pleasant, S. C., to Miss Stella Virginia Pope of Dade City, Fla., June 20.

Frank Cutchin Bone, Rocky Mount, N. C., to Miss Margaret Leigh Lowrance of Durham, July 6.

Moylan Bernard Kehoe, Flint, Mich., to Miss Eileen Elizabeth O'Brien in Normandy, Mo., in June.

James Andrew Clark Jr., Ruleville, Miss., to Miss Margaret Ellen Smith of Amite, La., June 5.

Howard Hunter Nichols, Nashville, Tenn., to Miss Betty Jane Martin of Jackson, Miss., July 1.

William C. Van Buskirk, Boston, to Miss Vivian Morton of Warrensburg, Mo., in June.

Joseph Stuart Staley to Miss Dorothy Maxine Thomas, both of Marion, Va., May 31.

Deaths

Hatch Whitfield Cummings, Hearne, Texas; University of Tennessee Medical Department, Nashville, 1892; born in Aberdeen, Miss., Sept. 14, 1869; member of the American Medical Association and in 1930 a member of its House of Delegates; past president and for many years a member of the Texas State Board of Medical Examiners; past president, chairman of the section on state medicine and public hygiene in 1910 and again in 1919, at one time a member of the committee on legislation and public instruction, and councilor of the Eleventh District in 1906-1907 and 1907-1908, State Medical Association of Texas; one of the organizers and first president of the Brazos Valley Medical Association in 1896; a charter member of the Brazos-Robertson Counties Medical Society, which he served as president from 1927 through 1931; member of the state board of health from 1909 to 1911; health officer; for many years president of the school board; served as president of the Hearne Building and Loan Association, the Planters and Merchants State Bank and the Chamber of Commerce; for many years served as local surgeon for the Missouri Pacific and Southern Pacific railways; died July 29, aged 76, of arteriosclerosis.

Warren Kidwell Stratman-Thomas, Madison, Wis.; University of Wisconsin Medical School, Madison, 1928; born in Dodgeville, Wis., June 19, 1894; at one time assistant bacteriologist and research pharmacologist at the University of Wisconsin; in 1928 made a study of sleeping sickness in the Belgian Congo under a special fellowship created by the Guggenheim Memorial Foundation, the University of Wisconsin and the Parke Davis Laboratories; formerly member of the staff of the International Health Division of the Rockefeller Foundation and director of the bureau of malaria control at Nicosia, Cyprus; served as malariologist for the Tennessee State Department of Health and as assistant professor of preventive medicine at the University of Tennessee College of Medicine in Memphis; served during World War I and with the tropical medical service of the navy during World War II; at one time affiliated with the Florida State Board of Health; died in St. Mary's Hospital August 16, aged 52.

Theodore Lasater Terry ® Boston; University of Texas School of Medicine, Galveston, 1922; born in Ennis, Texas, on Feb. 19, 1899; assistant professor of ophthalmology at the Harvard Medical School and the graduate school; at one time on the faculty of his alma mater; diplomate of the National Board of Medical Examiners; specialist certified by the American Board of Ophthalmology, of which he had been assistant secretary; member of the American Academy of Ophthalmology and Otolaryngology, American Association for the Advancement of Science, and American Ophthalmological Society; member, past president and secretary of the New England Ophthalmological Society; member and trustee of the Association for Research in Ophthalmology; on the staffs of the Massachusetts General Hospital and the Massachusetts Eye and Ear Infirmary; elected president of the Foundation for Vision, of which he had been one of the founders; died September 28, aged 47.

Frank Wilson Jr., Raleigh, N. C.; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1932; born in Greenville, N. C., June 30, 1909; served an internship and residency at the University Hospital in Baltimore and a residency at the Baltimore City Hospitals; received additional training at the U. S. Marine Hospital in Baltimore; member of the American Medical Association; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; began active duty as a captain in the medical corps, Army of the United States, on July 21, 1942; service terminated in July 1946 with the rank of major; on the staffs of the Rex and St. Agnes hospitals; consulting surgeon of the State Hospital and the Seaboard Air Line Railroad; member of the Raleigh Rotary Club; died in the Duke Hospital, Durham, September 22, aged 37, of influenza and encephalomyelitis.

Joseph C. Anderhub, Chicago; Ludwig-Maximilians-Universität Medizinische Fakultät, Munich, Bavaria, Germany, 1889; St. Louis College of Physicians and Surgeons, 1892; died at the Little Sisters of the Poor August 23, aged 83, of generalized arteriosclerosis.

Robert Vivian Baker, Camarillo, Calif.; Rush Medical College, Chicago, 1922; member of the American Medical Association; affiliated with the Camarillo State Hospital; died August 25, aged 52, of coronary occlusion.

Joseph Rolla Baldwin, Des Moines; University of Pennsylvania Department of Medicine, Philadelphia, 1898; died August 31, aged 83, of cerebral hemorrhage.

Richard Francis Barrett, Shrewsbury, Mass.; University of Bishop College Faculty of Medicine, Montreal, Que., Canada, 1904; died August 13, aged 75, of myocardial degeneration.

Arthur Clifton Conro, Attleboro, Mass.; Chattanooga (Tenn.) Medical College, 1901; member of the American Medical Association and the New England Otological and Laryngological Society; died in Boston July 18, aged 76, of carcinoma of the liver.

Mary Fisher DeKruif, Wellesley, Mass.; University of Michigan Medical School, Ann Arbor, 1916; affiliated with Simpson Infirmary of Wellesley College; died May 8, aged 57, of carcinomatosis.

William Alva Earle, South Brooksville, Maine; Bennett College of Eclectic Medicine and Surgery, Chicago, 1879; died in Brookline, Mass., March 26, aged 88, of cerebral arteriosclerosis.

William Henry Greeley, Weymouth, Mass.; College of Physicians and Surgeons, Boston, 1884; died in Holbrook April 3, aged 87, of mitral regurgitation.

Edwin Ball Hailey ® Conroe, Texas; University of Texas School of Medicine, Galveston, 1932; interned at the John Sealy Hospital in Galveston; president and formerly secretary of the Montgomery County Medical Society; died July 16, aged 40.

Ralph Ritter Higgins, Fall River, Mass.; Boston University School of Medicine, 1946; commissioned a lieutenant (jg) in the U. S. Naval Reserve; served an internship at the Medical College of Virginia, Hospital Division, in the capacity of a rotating intern at the Raiford Hospital in Franklin, Va., where he died July 27, aged 25, of injuries received in an automobile accident.

William Howe, Las Vegas, N. M.; Baltimore Medical College, 1898; member of the American Medical Association; died in July, aged 73.

George Franklin Jewett, White Salmon, Wash.; Starling Medical College, Columbus, 1882; died in Portland, Ore., September 20, aged 88.

Joseph Francis Kenney, Milwaukee; Milwaukee Medical College, 1908; on the staffs of St. Joseph's and West Side hospitals; affiliated with the Veterans Administration; died September 18, aged 60, of dissecting aneurysm of the aorta due to arteriosclerosis.

Joseph V. Kofron, Cleveland; Western Reserve University Medical Department, Cleveland, 1893; member of the Cleveland Academy of Medicine; affiliated with the Cleveland Medical Library Association, of which he had been a founder; for many years on the staff of St. Alexis Hospital; died in Chagrin Falls, Ohio, September 20, aged 76, of cerebral hemorrhage and asthmatic bronchitis.

Paul Lilja Lane, Chicago; University of Illinois College of Medicine, Chicago, 1941; interned at the Augustana Hospital; also a graduate in dentistry; died in Framingham, Mass., July 13, aged 48.

George Franklin Libby, Fillmore, Calif.; Medical School of Maine, Portland, 1891; honorary member of the Colorado State Medical Society; member of the American Medical Association and the American Ophthalmological Society; formerly secretary of the Colorado Ophthalmological Society; served on the staffs of the Mercy and St. Anthony's hospitals in Denver and the Sanatorium of the Jewish Consumptives' Relief Society in Spivak; died in a local hospital September 13, aged 78, of heart disease.

Edward Daland Lovejoy, Salem, Mass.; University of Pennsylvania Department of Medicine, Philadelphia, 1904; served as clinical professor of medicine (dermatology) at the University of Southern California School of Medicine and professor of clinical dermatology at the College of Medical Evangelists, both in Los Angeles; died March 24, aged 70, of carcinoma of the lungs.

Joseph Lutkiewicz, Chelsea, Mass.; Middlesex College of Medicine and Surgery, Cambridge, 1929; died July 16, aged 58, of pulmonary tuberculosis.

Michael Joseph McIntee, Holyoke, Mass.; Columbian University Medical Department, Washington, D. C., 1899; died in Northampton April 22, aged 78, of generalized arteriosclerosis.

Alice Woodby McKane, Boston; Woman's Medical College of Pennsylvania, Philadelphia, 1892; died March 6, aged 83, of arteriosclerosis.

Lena Augusta Geraldson Miller ⊕ Napa, Calif.; Cooper Medical College, San Francisco, 1903; for many years affiliated with the Napa State Hospital in Imola; died August 14, aged 72, of coronary thrombosis.

Thomas Francis O'Brien ⊕ Worcester, Mass.; Harvard Medical School, Boston, 1921; member of the New England Obstetrical and Gynecological Society; fellow of the American College of Surgeons; on the staffs of the Worcester City and St. Vincent hospitals; consulting obstetrician, Harrington Memorial Hospital, Southbridge, and the Webster District Hospital in Webster; died September 16, aged 51, of coronary thrombosis.

Herbert G. Perry ⊕ Louisburg, N. C.; College of Physicians and Surgeons, Baltimore, 1915; served as chairman of the county board of education and member of the county board of health; past president of the Franklin County Medical Society; owned the Louisburg Hospital; died in September, aged 57, of heart disease.

Albie Warren Sylvester, Pittsfield, Mass.; Medical School of Maine, Portland, 1892; member of the American Medical Association; died June 20, aged 83, of cerebral hemorrhage.

Arthur James Joseph Sullivan, Fall River, Mass.; Jefferson Medical College of Philadelphia, 1912; member of the American Medical Association; died August 6, aged 57, of myocarditis.

Luella Stone Swauger ⊕ Oakland, Calif.; California Medical College, San Francisco, 1892; died September 15, aged 74, of cerebral hemorrhage and hypertension.

John Webb Vaughn, Bergey, Pa.; Medico-Chirurgical College of Philadelphia, 1895; served during World War I; formerly member of the Pennsylvania Boxing Commission; president of the medical staff of the Elm Terrace Hospital, Lansdale; died September 24, aged 72.

Claud Earnest Watson, Dallas, Texas; University of Texas School of Medicine, Galveston, 1919; member of the American Medical Association; at one time assistant city health officer and an instructor of psychology at his alma mater; died in St. Paul's Hospital July 21, aged 55, following an operation for gallstones and obstruction of the bowels.

Isabel Gray Weston, Wellesley, Mass.; Boston University School of Medicine, 1887; died in Natick, July 19, of a fractured right femur.

Thomas Spaulding Williams, Dallas, Texas; Southern Methodist University Medical Department, Dallas, 1912; member of the American Medical Association; during World War I served overseas in the British army; an assistant surgeon in the U. S. Public Health Service; member of the staffs of the city board of health, St. Paul Hospital and Methodist Hospital, where he died July 18, aged 55, of coronary occlusion.

LIEUT. JOSEPH L. HALL
M. C., A. U. S., 1913-1944

LIEUT. COL. GEORGE T. COLVARD
M. C., A. U. S. (N. G.), 1896-1944

LIEUT. EDWARD F. RITTER JR.
(MC), U. S. N., 1909-1944

KILLED IN ACTION

Joseph Leslie Hall, Stanton, Texas; University of Texas School of Medicine, Galveston, 1938; member of the American Medical Association; interned at the Robert B. Green Memorial Hospital in San Antonio; began active duty as a first lieutenant in the medical corps, Army of the United States, on Sept. 2, 1941; taken prisoner by the Japanese on the fall of Bataan in 1942 and remained in custody of the enemy until his death; awarded posthumously the bronze star medal for meritorious achievement while in a military prison camp in the Philippine Islands; died Oct. 24, 1944, aged 31, 200 miles off the coast of China, when the Japanese ship on which he was a prisoner was sunk by submarine action.

George Todd Colvard ⊕ Deming, N. M.; Medical College of Virginia, Richmond, 1924; interned at City Home Hospital, Richmond, Va., and St. Francis Hospital in Jersey City; past president of the New Mexico Medical Society and the president of the Luna County Medical Society; served as a county health officer; chairman of the board of the Carrie Tingley Hospital for Crippled Children in Hot Springs; surgeon for the Santa Fe Railway and the Southern Pacific Railway; began active duty as a major in the National Guard, 200th Coast Artillery (AA) in 1941; later promoted to lieutenant colonel; awarded the Bronze Star Medal posthumously; his unit received two citations in its withdrawal to Bataan; killed at Mindanao, P. I., when a Japanese freighter loaded with American prisoners of war was sunk by an American submarine Sept. 7, 1944, aged 49.

Edward Francis Ritter Jr., ⊕ Passed Assistant Surgeon, Lieutenant, U. S. Navy, Mattoon, Ill.; Northwestern University Medical School, Chicago, 1938; interned at the Jersey City Hospital in Jersey City; served a residency in ophthalmology at the Passavant Memorial Hospital in Chicago; entered the U. S. Navy in March 1939 and was stationed at the Naval Hospital in Brooklyn; later sent to the Philippines, where he was a prisoner of the Japanese; killed in action in the Asiatic area Oct. 24, 1944, aged 35.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 23, 1946.

The Need for Creating a Profession of Child Care

In a communication to the *Times* James Young, professor of obstetrics at the British Postgraduate Medical School, refers to the report of the chief medical officer of the Ministry of Health, which shows that during the war years there was a definite fall in the stillbirth rate and a considerable decrease in the deaths of the newborn. This he attributes chiefly to the better average nutrition of mothers resulting from higher wage levels, rationing and food priorities and supplements ordained under the food control system. Healthier mothers produced healthier babies despite factors operating against family stability, such as women's wholesale entrance into industry and damage from bombing. In the postwar years, with the risk of lowered economic standards and shortage in foods essential to expectant mothers, especially milk, Professor Young holds that it is the duty of the administration to maintain the highest possible level of food priorities and supplements. But this is not enough. We require a higher standard of child care. In countries more enlightened in child welfare, such as New Zealand and the Netherlands, personnel are specially trained for such home duties. In these countries the standard of mothercraft is much higher and the wastage of infant life is much lower than in our own. The minister of education recently stated that never in the history of education had there been such an overwhelming demand from all types of people for help in running the home. Professor Young thinks that the time is ripe for the creation of a profession of child care in its various grades—child nurses for private and public nurseries and institutions, teachers and administrators in child care. The professions of medicine, teaching and sick nursing have each their standards of training and diplomas. There are colleges, centrally controlled and state aided, for domestic science; but, for the women who wish to learn the greatest of all domestic sciences and arts, those relating to child care, facilities and encouragement do not exist.

Department of Medical Photography at Hospital

A new departure has been made by the Westminster Hospital, which has established a department of medical photography under the full time charge of a physician. One part of the work is to help in clinical investigation by enabling the staff to keep permanent visual records and to compare serial studies. It also helps in the teaching of students. Thus a film on inflammation has been made and other films are in preparation. For tutorial teaching photographic displays, for example one on gout, are arranged, and the film strip replaces the lantern slide. With a projector, pictures of any magnification which the light allows are reproduced on a screen.

The Centenary of the Discovery of Anesthesia

The centenary of the discovery of anesthesia is being celebrated. At the Wellcome Historical Museum there was an exhibition arranged in an instructive way by means of originals, reconstructions, models, photographs, diagrams and a large number of books. One show case illustrated the knowledge of narcotic and stimulating drugs in primitive times and among the Greeks and Romans, another the days of surgery without anesthesia; others the therapeutic uses of vapors and gases and ether frolics, inhalation anesthesia and nitrous oxide anesthesia.

The director of the museum, Dr. Ashworth Underwood, presided at a meeting in which Lord Moran, president of the Royal College of Physicians, delivered an address. He said that for ages people had tried to produce something which would permit operations being done without pain, but not until the nineteenth century was this achieved. It was left to Wells and Morton to bring it about. Wells apparently did everything necessary, but Morton had to put it across. Anesthesia was no accident but part of a great crusade. He looked with profound satisfaction on the fact that the democracies of Britain and America had taken the chief share in this humanizing process.

On the same day a meeting of the History of Medicine Section of the Royal Society of Medicine was held. Professor Charles Singer, medical historian, presided. He said that it was an error to suppose that before 1846 operations were always performed on the fully conscious. Narcotics and analgesics were known early. They were mentioned in Egyptian writings and in the hippocratic collection. They were mainly of the natural order Solanaceae. In the middle ages the main narcotics were opium, mandrake or belladonna, chiefly the leaves, and hyoscyamus or henbane. Hypnotism was first used in surgical operations by John Elliotson (1791-1862).

CHILE

(From Our Regular Correspondent)

Oct. 1, 1946.

Meeting of Radiologists

The Sociedad de Radiología of Chile, which was established in 1943, held a meeting in Santiago de Chile, September 15 to 17. From now on a meeting will be held each year. The society met in 1944 and 1945 in Santiago, Valparaiso and Concepción. The 1946 meeting was of unusual importance, and there was a large attendance. The official topic was the x-ray diagnosis of pulmonary diseases, and that of the first session was bronchiectasis, pulmonary abscess and silicosis. Drs. F. Daza and A. Toledo, head and assistant head respectively of the Department of Radiology of the Hospital Salvador, and Drs. W. Koch and E. Bellolio were official speakers. Dr. Daza spoke on x-ray semeiology, pathogenesis and anatomic interpretation of bronchiectasis. Dr. Toledo spoke on the differential x-ray diagnosis of circumscribed pulmonary suppuration either of long duration or shortened by the treatment. Drs. W. Koch and E. Bellolio spoke on radiologic diagnosis of pulmonary silicosis. The incidence of industrial silicosis is very high in Chilean industrial centers. In the afternoon Dr. O. Riedel, head of the Institute of Radiology of the San Francisco de Borja Hospital, spoke on the nomenclature of pulmonary diseases. The terminology for designating the different pulmonary lesions encountered during x-ray examination should be unified for a better coordination of studies and results. The speaker described the images he has observed most frequently in pulmonary tuberculosis. Dr. S. Calderón, head of the x-ray department of the National Department for Medical Care of Employees, discussed various aspects of the establishment of a department of preventive medicine. Dr. J. Gundelach, head of the x-ray Department of the Hospital de Tisiología, discussed the organization of a hospital for patients with tuberculosis. The third session was divided into two subsections. Dr. M. Riera, assistant of the Institute Heegewaldt, spoke on x-ray diagnosis of acute pulmonary diseases, based on x-ray observations in cases of lobar pneumonia. The favorable effect of modern chemical therapy is shown in the x-ray images of patients with lobar pneumonia in the course of the treatment. Dr. C. Velasco, assistant in the department of radiology of the Hospital Militar of Chile, spoke on x-ray diagnosis of virus pneumonia. The second subsection was held in association with the Sociedad Chilena de Gastroenterología. Dr. Fernán Díaz, assistant of the Instituto Heegewaldt, spoke on early x-ray diagnosis of gastric cancer, with special reference to cases simulating ulcer. At the closing session on September 17 Dr. L. Guzmán spoke on general indications for roentgen therapy and curietherapy. Other speakers were Dr. L. Opazo, professor of radiology of the Universidad Central, A. Larraguibel, dean of the Faculty of Medicine of the Universidad Central and Dr. R. Salas Pereira, president of the Sociedad Chilena de Radiología.

Correspondence

ARMY MEDICAL LIBRARY

To the Editor:—This is an earnest plea to all American physicians to support to the utmost the development of the Army Medical Library. Serving the profession in a more important way than any other single institution, this great library needs the personal interest and backing of all American physicians if it is to continue to maintain its activities in the manner expected of it. It is particularly important that American physicians support the effort of the Army Medical Library to acquire the permanent fireproof library building necessary to house its great treasures. Plans for such a building are in process, and a location for the new building has wisely been provided near the Library of Congress in Washington. This will assure maximum efficiency in the future development and use of the Army Medical Library for the benefit of the medical profession. It is important that individual physicians inform their representatives and senators of the importance of providing a safe and proper housing for the greatest medical library in the world.

Physicians are learning generally through hard experience that the successful practice of medicine requires continual study. The Army Medical Library is perhaps the single greatest factor in the United States in maintaining the standard of medical education, both for undergraduates and for postgraduates. It sets the standards for all medical libraries, whether established in medical schools, research institutions, county societies or academies. These libraries are the keynote to the entire medical educational effort. They all rely continually on the services of the Army Medical Library. This service can be extended to the mutual advantage of all concerned, through the enlightened interest and support of physicians and medical students. It is fortunate that the American Medical Association works so closely with the Army Medical Library. This cooperation makes possible the publication of the QUARTERLY CUMULATIVE INDEX and also of the great *Index Catalogue.* These are the necessary tools for the utilization of the tremendous body of medical literature now available for the student.

The Army Medical Library serves truly as a national medical library. However, it serves equally truly as a world medical library. The extent of its influence is clearly indicated by a recent English editorial (*Lancet* **2**:168 [Aug. 3] 1946). This editorial welcomed the receipt of the recent volumes of the *Index Catalogue,* so that English physicians may again have an opportunity to keep abreast of world literature in medicine. The editorial commented on the fact that the *Index Catalogue,* established by Dr. John S. Billings, is now in its fifty-sixth volume. It points out that 80 per cent of the issues are given freely to medical libraries in all parts of the world. The editorial goes on to comment on the wise guidance of Col. Harold W. Jones in maintaining the high quality of the *Index Catalogue.*

It may be possible for the Army Medical Library to extend its usefulness by establishing sublibraries in strategic parts of the country, such as on the West Coast, in the Middle West and in the South. Such sublibraries could contain microfilms of important periodical sets, together with duplicate material. Fortunately, medical libraries anywhere can continue to obtain assistance from the Army Medical Library in microfilms of otherwise inaccessible material. This service was one of the most important professional aids to our wideflung medical officers during the war.

It is necessary for the Army Medical Library to have ample funds for maintenance of its services and to be assured of the permanent fireproof building needed to house its great treasures. This building may become a center for basic research in all the health sciences. In order to obtain these funds it is essential that physicians generally show their representatives in Congress that they appreciate and need the continued service of the Army Medical Library. As William H. Welch indicated, the Army Medical Library still remains the greatest contribution of this country to medicine.

CHAUNCEY D. LEAKE, M.D., Galveston, Texas.
Vice President, University of Texas.

REACTION TO PENICILLIN

To the Editor:—In view of the good results that have been reported during the last eighteen months in the use of penicillin aerosol treatments for asthma due to bacterial allergy, I would like to report a very severe reaction to penicillin by an asthmatic patient.

The patient received treatments of an hour each for three successive days during one week and this was repeated again the next week. Penicillin, 40,000 units per cubic centimeter, was used and the aerosol technic was employed. Following the third treatment in the second week the patient, who had been suffering from asthma for fifteen years, went into status asthmaticus, which was very difficult to control. Nothing like this had occurred to this patient before. The attack was much worse than any which he had ever experienced.

It would seem important that controlled research should be undertaken on methods to avoid such reactions in asthmatic patients.

FRANKLIN E. BISSELL, M.D., Los Angeles.

POLIOMYELITIS VIRUS IN SEWAGE

To the Editor:—In the editorial comment on poliomyelitis virus in sewage (THE JOURNAL, September 7) the statement is made that "Kling's theory was presumably based on experimental or statistical errors." Kling's work was done on poliomyelitis organisms occurring in Stockholm sewage. The American investigators used American sewage and a mixture of laboratory strains of the organisms and did not obtain the same results as Kling. Is it fair to conclude therefore that Kling's theory was based on errors, either experimental or statistical, considering the possible differences in the sewage and the strains of the organisms? Would not the penultimate sentence have been a more scientific as well as a more courteous conclusion?

JOSEPHINE EVARTS, M.D., Kent, Conn.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, *Nov. 16, page 668.*

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Part II.* Dec. 16-17. *Part III.* Boston, Chicago, Jan. 9-11. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral.* Los Angeles, 2d week in April. Sec., Dr. P. M. Wood, 745 Fifth Ave., New York.

AMERICAN BOARD OF DERMATOLOGY & SYPHILOLOGY: *Oral.* Cleveland, Dec. 5-7. Sec., Dr. George M. Lewis, 66 E. 66th St., New York 21.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written.* March 17. Asst. Sec., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY. Applications for examination will be accepted until Feb. 15. Sec., Dr. P. C. Bucy, 912 S. Wood St., Chicago.

AMERICAN BOARD OF OPHTHALMOLOGY: *Oral. All Groups. Parts I and II.* New York, June 1947. Final date for filing application is Dec. 1. Chicago, October 1947. Final date for filing application is March 1. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Me.

AMERICAN BOARD OF OTOLARYNGOLOGY: St. Louis, April 16-19. Sec., Dr. D. M. Lierle, University Hospitals, Iowa City, Ia.

Bureau of Investigation

MISBRANDED PRODUCTS

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the Federal Security Agency

[EDITORIAL NOTE.—These Notices of Judgment are issued under the Food, Drug and Cosmetic Act, and in cases in which they refer to drugs and devices they are designated D.D.N.J. and foods, F.N.J. The abstracts that follow are given in the briefest possible form: (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the date of shipment; (4) the composition; (5) the reason for the charge of misbranding, and (6) the date of issuance of the Notice of Judgment.]

Adolorine.—John I. Wean, Eustis, Fla. Shipped Oct. 15, 1942. Composition: essentially oils of mustard and thyme, and a low-boiling petroleum oil. Misbranded because label falsely represented it as an effective remedy for sore muscles and joints from strain or overwork, for sprains, bruises, itching and nasal irritations. Further misbranded because label did not bear common or usual name of each active ingredient, since the composition was given in Latin rather than in English.—[*D. D. N. J., F. D. C. 994; November 1944.*]

Booth's Balm.—Booth's Hyomei Company, Ithaca, N. Y. Shipped April 16, 1942, by Dobson & Company, Nashville, Tenn., and Rutherfordton, N. C. Composition: plant extractives, particularly chlorophyll, as well as a cresol-like substance and a trace of eucalyptol, in a base of petrolatum and fatty material. Misbranded because label falsely represented product as effective in preventing or curing dandruff, pimples, blackheads, eczema and itching skin, besides benefiting bronchial catarrh, head colds, spasmodic croup, aching feet, tender breasts and sore nipples. —[*D. D. N. J., F. D. C. 1011; March 1945.*]

B. P. Stomach and Intestinal Corrective.—Burwell & Dunn Company, Charlotte, N. C. Shipped April 16, 1942, by Dobson & Company, Nashville, Tenn., and Rutherfordton, N. C. Composition: essentially bismuth subsalicylate, sugar and water, with a small amount of volatile oils, including peppermint. Misbranded because label falsely represented product to be efficacious for stomach fermentation, vomiting, diarrhea, cholera morbus and some other disorders in children and adults.—[*D. D. N. J., F. D. C. 1011; March 1945.*]

Chu-man-ie's Regular "Triple XXX" Herb and Iron Mensal Medicine.—Charles Roehm, trading as Chumanie Medicine Company, New Richmond, Ohio, and Detroit. Shipped Jan. 12, 1942. Composition: tablets containing ferrous sulfate and plant material, including aloe. Misbranded because labeling falsely represented product to be efficacious for amenorrhea, oligomenorrhea and dysmenorrhea and failed to warn that the product, as a laxative, should not be used continuously.—[*D. D. N. J., F. D. C. 1007; March 1945.*]

Dr. Wolff's Pro-cys-kera Ointment.—Dr. George F. Wolff, Chicago. Shipped Sept. 3, 1942. Composition: essentially sulfur, salicylic acid, menthol, camphor and ichthammol, in a base of saponifiable fat, lecithin and cholesterin. Misbranded because label falsely represented that product would eradicate scalp disorders and nourish, strengthen and promote the growth of hair, penetrate the scalp and prevent infection.—[*D. D. N. J., F. D. C. 992; November 1944.*]

Ekzebrol.—E. Tosse and Company, Brooklyn. Shipped Oct. 23, 1942. Label declared: "Ekzebrol 10% Strontium Bromide in Sterile Saline Solution For Intravenous Injection." Misbranded because of false label representations regarding alleged virtues of strontium bromide and also concerning alleged effectiveness of Ekzebrol in skin diseases.—[*D. D. N. J., F. D. C. 995; November 1944.*]

Fem-Re-Ills.—Henry S. Wampole Company, Baltimore. Shipped April 16, 1942, by Dobson & Company, Nashville, Tenn., and Rutherfordton, N. C. Composition: pills chiefly containing ferrous sulfate, calcium carbonate, oil of savin, sugar, and plant extractives, including aloes, and small amounts of ergot alkaloids. Misbranded because labeling falsely represented that product would correct various menstrual disorders.—[*D. D. N. J., F. D. C. 1011; March 1945.*]

Fero-Tona.—Great Lakes Laboratories, Cleveland; Ber-Mel, Inc., Cleveland, distributors. Shipped May 25 and Nov. 6, 1942, and Jan. 2, 1943. Composition: essentially hexamethylenamine, potassium iodide, ferric chloride, laxative plant drugs and strychnine sulfate. Misbranded because, among other things, label lacked warning against taking a laxative continuously or when symptoms of appendicitis are present, administering a strychnine mixture to children or elderly persons, or one containing potassium iodide to those having goiter, except on advice of a physician. —[*D. D. N. J., F. D. C. 1003; March 1945.*]

Formula "U."—Universal Antiseptic & Research Laboratories, Inc., Bristol, Tenn. Shipped Sept. 5, 1942. Composition: essentially water, carbolic acid, sugars, thymol, sage, alum, borates and aromatic substances. Misbranded because labeling falsely represented product as an adequate treatment for major burns, varicose ulcers and infected gums.—[*D. D. N. J., F. D. C. 993; November 1944.*] Possibly this is a later name for a product of essentially the same composition but slightly different name, "Universal Formula," put out by the same concern and declared misbranded under *D. D. N. J. 46,* issued in May 1940. This was abstracted in THE JOURNAL Nov. 2, 1940, page 1567.

Irogen.—Guardian Health Products Company, Inc., Atlanta, Ga. Shipped April 16, 1942, by Dobson & Company, Nashville, Tenn., and Rutherfordton, N. C. Composition: essentially alcohol, an iron salt, malt, cinchona and nux vomica alkaloids, a manganese salt, wild cherry, emodin-bearing drugs, phosphorus compounds, a sodium salt, sugar and water. Misbranded because falsely represented in labeling as efficacious for enriching the blood, building strength, restoring impaired tissues, aiding digestion and restoring tone to the system.—[*D. D. N. J., F. D. C. 1011; March 1945.*]

Jew David's or Hebrew Plaster.—Comstock & Company, Rochester, N. Y. Shipped April 16, 1942, by Dobson & Company, Nashville, Tenn., and Rutherfordton, N. C. Composition: a brown, somewhat plastic mass resembling Burgundy pitch and having a turpentine odor. Misbranded because label falsely represented product as efficacious for treating local inflammation, scrofulous conditions, gout, inflammatory and chronic rheumatism, lung and liver disorders, stomach pains and spinal weaknesses.—[*D. D. N. J., F. D. C. 1011; March 1945.*]

Liver-Cure—Munyon's Homeopathic Home Remedies.—Henry S. Wampole Company, Baltimore. Shipped April 16, 1942, by Dobson & Company, Nashville, Tenn., and Rutherfordton, N. C. Composition: small sugar pellets with nothing else detected. Misbranded because labeling falsely represented that product would be helpful for all liver disorders, as well as biliousness, constipation, bilious and sick headache, and would relieve bad taste in the mouth, coated tongue, worn-out feeling, highly colored urine, soreness in the right side, dull spirits and restless nights.—[*D. D. N. J., F. D. C. 1011; March 1945.*]

Nelson's Antacid Powder.—Great Lakes Laboratories, Cleveland. Shipped May 25 and Nov. 6, 1942, and Jan. 2, 1943. Composition: essentially compounds of sodium, calcium and magnesium, including carbonate. Misbranded because label falsely represented that, among other things, product offered a rational and effective method of re-establishing the normal alkalinity of the body fluids without the danger of systemic disturbance, instantly neutralized all stomach acids, and gave prompt relief from acidity and gas pressure.—[*D. D. N. J., F. D. C. 1003; March 1945.*]

Rheumatic No. 3 Tablets.—Charles Killgore Company, Inc., Yonkers, N. Y. Shipped Sept. 8 and Dec. 1 and 4, 1941. Adulterated and misbranded because strength differed from and quality fell below what was represented, namely, that each tablet contained 7½ grains of sodium salicylate, whereas not more than 6.18 grains of this was found.—[*D. D. N. J., F. D. C. 1012; March 1945.*]

Sani-Caps.—Sani-Caps, Rock Island, Ill. Shipped Nov. 12, 1942. Composition: essentially glycerin and boric acid with small amounts of iodide and a silver compound. Misbranded because label falsely represented product as being efficacious for "female trouble," even in cases of long standing. Further misbranded because represented to prevent infection. Misbranded also because label did not give names of active ingredients or name and place of business of manufacturer, packer or distributor.—[*D. D. N. J., F. D. C. 987; November 1944.*]

Targosine.—Targosine Company, Monroe, N. C. Shipped April 16, 1942, by Dobson & Company, Nashville, Tenn., and Rutherfordton, N. C. Composition: essentially turpentine, kerosene, fatty material, a water-soluble gum and water, with a small amount of chloroform. Misbranded because falsely represented as efficacious for eczema, rheumatic pains, croup, tonsillitis, vaccination sores and some other disorders.—[*D. D. N. J., F. D. C. 1011; March 1945.*]

Thompson's Daily Vitamin and Mineral Ration.—William T. Thompson Company, Los Angeles. Shipped Oct. 12, 15 and 20, 1942. Composition according to label: vitamins A, B_1, B_6, C, D and G, niacin amide, pantothenic acid, biotin, calcium, phosphorus, iodine, iron and copper. Misbranded because falsely represented, among other things, to improve appetite and digestion, build nervous stability, prevent impaired eyesight due to vitamin deficiencies, build up the blood count, prevent dental cavities and bleeding gums, reduce colds, cut down fatigue, and do some other things.—[*D. D. N. J., F. D. C. 997; November 1944.*] Further misbranded under provisions of the law applicable to foods, as reported in *F. N. J. 5787.*

Triple-X Medicine.—Triple X Laboratories, Scotland Neck, N. C. Shipped April 16, 1942, by Dobson & Company, Nashville, Tenn., and Rutherfordton, N. C. Composition: copaiba and cubeb oils and a sugar solution, emulsified with a water-soluble gum. Misbranded because label falsely represented that product would prevent or cure acute and chronic discharges, and because label did not bear common or usual name of each active ingredient.—[*D. D. N. J., F. D. C. 1011; March 1945.*]

Viteen.—L. N. LeBold & Company, Rochester, N. Y. Shipped between Aug. 15 and Oct. 27, 1942. Composition: chiefly dried skimmed milk, with smaller amounts of egg yolk, sugar, cereal products, calcium and phosphorus compounds, and flavoring material. Misbranded because of label representations as to protein and mineral content and as to suitability as a weight reducer and a supplement to restricted and unbalanced diets.—[*D. D. N. J., F. D. C. 990; November 1944.*] Also misbranded under provisions of the law applicable to foods, as reported in *F. N. J. 5786.*

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Liability of Physician for Departing from Approved Methods.—The plaintiff sued for damages for injuries resulting from the alleged negligence of the defendant in the treatment of a fracture. From a judgment for the plaintiff, the defendant appealed to the Supreme Court of North Carolina.

The plaintiff fractured one of the bones in her right forearm and engaged the defendant physician to treat her. He set the bone and put the arm and wrist on a board splint. Later he removed the board splint and substituted a metal cast, at the same time massaging the plaintiff's arm and hand. The defendant subsequently visited the plaintiff once or twice a week, the plaintiff testifying:

> Each time he came he brought a tube or something and massaged my arm. He would take my arm out of the cast and massage it. He would not support the broken part of my arm while he was massaging it. . . . He held it with the fingers in one hand and rubbed my arm and hand with his other hand.

After about three months the plaintiff's hand was so drawn and bent that she could not use it, and the defendant took her to another physician who examined her arm and took an x-ray. He found the bone out of position and testified that the displacement could have occurred when the physician removed the arm from the splint. The plaintiff introduced expert evidence to the effect that the manner in which the defendant massaged the plaintiff's arm "was unusual" and not according to the general practice, and that "too frequent removal of a broken bone from the cast is bad practice . . ."

The Supreme Court said that a departure from approved methods in general use, if injurious to the patient, suffices to carry the case to the jury on the issue of negligence. On the basis of all the evidence the court was of the opinion that the removal of the cast once or twice a week and the massaging of the plaintiff's arm and hand without any support under the broken part was unusual and a departure from approved methods in general use. The jury was warranted, concluded the court, in finding that such conduct was injurious, so the judgment for the plaintiff was accordingly affirmed.—*Davis v. Wilmerding, 24 S. E. (2d) 337 (N. C., 1943).*

Privileged Communications: Physician's Report to Insurer.—Plaintiff obtained an award for an industrial injury, the award being against the defendant insurance company. Subsequently the insurance carrier filed a motion to reopen the case and discontinue payments on the award. Attached to this motion was a physician's report as required by the workmen's compensation act. On the theory that this report was libelous, the plaintiff filed suit for damages against the insurance company and obtained judgment in the trial court, from which judgment the defendant appealed to the Supreme Court of Oklahoma.

The physician's report, in the form of a letter addressed to the manager for the insurance carrier, stated among other things that in his opinion the plaintiff exaggerated his condition and appeared to be in good health, suffering from no disability and able to do light work. The report then contained this paragraph:

> This patient has had a positive Wasserman test on two previous occasions, a positive Wasserman test was obtained during my treatment. He was given several shots of Mapharsen and seemed to improve, but he absolutely refused further Leutic treatment because it made him sick. He flatly refused to have a spinal puncture done to determine his Wasserman reaction and colloidal curves for Lues.

The plaintiff contended that the statement was libelous and was not relevant and pertinent to the issue involved in the proceeding to discontinue compensation, whereas the defendant contended that the statement was absolutely privileged.

The Oklahoma statute (12 O. S. 1941 section 1443) provides:

> A privileged publication or communication is one made: First. In any legislative or judicial proceeding or any other proceeding authorized by law; . . . No publication which, under this section, would be privileged, shall be punishable as libel.

Furthermore, rule 17 of the state industrial commission provides:

> The Commission will not consider nor set for hearing any motion to discontinue payment of compensation ordered . . . unless such motion to discontinue compensation sets up sufficient grounds supported by a physician's report.

It is clear, said the Supreme Court, that a proceeding before the state industrial commission is a "proceeding authorized by law" within the purview of section 1443. It is also clear that it is proper and necessary to file a physician's report with a motion to discontinue compensation under rule 17. Bearing in mind the foregoing rules, we are of the opinion, and hold, said the court, that the statement here complained of was pertinent to the question raised by the motion to discontinue compensation. The motion contained the allegation that the claimant "is able to return to ordinary manual labor and is entitled to no further compensation" by reason of the injury. The physician's report tended to sustain such allegation. If the disability was due entirely to syphilis, the court continued, the insurance carrier was not liable for further compensation. And, since the matter complained of was filed as a part of the pleading in the case, the question as to whether the matter was pertinent or relevant was one for the court to determine as a matter of law and not one to be submitted to the jury. The court accordingly concluded that the matter complained of was absolutely privileged, that a question of its being false or made with malice was immaterial, and the judgment in favor of the plaintiff be reversed.—*Pacific Employers Insurance Company v. Adams, 168 P. (2d) 105 (Okla., 1946).*

Medical Motion Pictures

FILM REVIEW

Hemostasis with Oxidized Cellulose (Absorbable Gauze and Cotton). Prepared in 1946 by Virginia Kneeland Frantz, M.D. 16 mm., color, silent, 850 feet (one reel). Showing time, thirty-five minutes. Investigation carried out at Columbia-Presbyterian Medical Center under OSRD Contract. Procurable on loan from the author at Department of Surgery, Columbia University College of Physicians and Surgeons, 630 West 168th Street, New York 32.

This film presents an experimental and clinical study of the new hemostatic agent oxidized cellulose. The color photography is excellent. The film begins with the presentation of the chemistry and physical properties of oxidized cellulose as well as its biologic properties when the oxidized cellulose comes in contact with blood. Tests of the absorptive properties of the oxidized cellulose are demonstrated in experiments on rats, and the hemostatic properties are demonstrated in experimental operations on dogs, in which incisions are made in the kidney and the spleen. The film then presents clinical data on the use of oxidized cellulose in operations for brain tumor, in which oxidized cotton is used to control bleeding from the dura, and oxidized gauze is used to control bleeding from the bone flap.

In another clinical case in which a biopsy of the kidney is performed, the use of the oxidized gauze is demonstrated. In a suprapubic prostatectomy the oxidized gauze is used for controlling the bleeding from the prostatic bed. In a case of chronic varicose ulcer in which deep incision is made into the scar tissue about the ulcer, the oxidized gauze is used as an aid in controlling bleeding. This particular case illustrates one interesting feature of the oxidized cellulose in that it can be subsequently peeled away from the raw surface after three days without any evidence of adherence of the gauze to the raw surface of the wound and thus without causing any further bleeding.

This film is of value to the surgeon to give a better understanding of the properties of oxidized cellulose and the technic of application to obtain hemostasis. It would be a suitable film for surgeons and for resident staff personnel.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Clinical Pathology, Baltimore

16:413-476 (July) 1946

Relation of Urea Nitrogen to Nonprotein Nitrogen of Blood: I. Antemortem Data on Whole Blood. R. Dominguez, Elizabeth Pomerene and Elinor M. Zorn.—p. 413.
Liver Function Tests. L. J. Wade.—p. 426.
Simplified Test for Fragility of Erythrocytes. R. Straus and Renee Faigin.—p. 437.
Composition of Seitz Filter Pads. H. B. Webb.—p. 443.
Microtechnic of Pathologic Eye: III. Orientation and Division of Eyeball. G. E. Lathrop.—p. 448.
Blood Cell Counts and Hemoglobin Value in Normal and Diabetic Dogs. E. Marie Smith.—p. 457.
Arteriovenous Fistula Involving Aorta and Superior Vena Cava: Report of Case. J. W. Walker and V. J. Dardinski.—p. 462.
Sacral Spina Bifida, Intrapelvic Meningocele and Sacrococcygeal Teratoma: Report of Case. C. M. Alexander and L. D. Stevenson.—p. 466.

American J. Digestive Diseases, Fort Wayne, Ind.

13:245-274 (Aug.) 1946

*Some Effects of Gum Chewing on Gastric Acidity in Healthy Individuals. C. S. Smith, Helen L. Wikoff and Martha E. Southard.—p. 245.
Tyrothricin in Proctology. A. J. Cantor.—p. 247.
Radiation Therapy of Cancer of Esophagus. J. Borak.—p. 249.
*Continuous Drip Treatment for Chronic Ulcerative Colitis: Preliminary Report. J. Nasio.—p. 252.
Brief Psychotherapy in Treatment of Gastrointestinal Disorders. M. L. Hayward.—p. 255.
Gastrointestinal Symptomatology in Schizophrenia. J. M. Schenck. —p. 257.
Peptic Ulcer: Roentgenologic, Laboratory and Clinical Follow-Up of 200 Peptic Ulcers. A. J. Delario.—p. 260.

Gum Chewing and Gastric Acidity.—Twelve healthy persons without apparent gastric disturbances who had served as subjects for several gastric analyses in a previous investigation were used for this study. After the standard test meal of crackers and water each subject chewed 2 Gm. of a chewing gum (composed of chicle flavored with oil of peppermint) for a period of five minutes. It was found that the chewing of gum depressed the gastric acidity of two thirds of the subjects during the period of an hour. Both the total and the free acidity were depressed in five sixths of the subjects for the first half hour. The maximum total acidity was less in 11 of the 12 subjects when gum was chewed. The time required to reach this maximum did not vary materially from the time required when no gum was chewed.

Continuous Drip Treatment for Chronic Ulcerative Colitis.—Nasio treats patients with ulcerative colitis by administering a colloidal preparation similar in mechanical properties to the normal secretion of the intestinal mucosa. He attaches a latex tube to a continuous drip apparatus and introduces it through the nose as far as the cardia. A 1:2 or 1:3 suspension of kaolin in alumina gel with liquid petrolatum 500 Gm., to which has been added bismuth subgallate 50 Gm., is placed in the drip apparatus. Seven hundred Gm. of the mixture usually is administered in twenty-four hours, although more may be given with safety. Sulfaguanidine or succinylsulfathiazole and any antispasmodic remedy, as 10 per cent paregoric, also may be added if desired. The drip is permitted to flow at the rate of 10 drops per minute the first day, later increased to 20 drops per minute as tolerated by the patient. The drip is discontinued for half an hour before and after breakfast and the midafternoon feeding, and for one hour before and two hours after lunch and dinner. During these intervals the patient may be permitted out of bed. Treatment is continued for periods of fifteen days, with rest intervals of not less than a month, and is repeated as necessary. Six cases of serious chronic ulcerative colitis are described, in which symptomatic relief occurred in eighteen to forty-eight hours after drip treatment was begun, with progressive clinical, roentgenographic and rectosigmoidoscopic evidence of improvement. In 2 cases a remission necessitated further drip treatment.

American J. Obstetrics and Gynecology, St. Louis

41:179-348 (Aug.) 1946. **Partial Index**

Prevention and Treatment of Carcinoma of Vulva. B. P. Watson and S. B. Gusberg.—p. 179.
*Aspiration of Stomach Contents into Lungs During Obstetric Anesthesia. C. L. Mendelson.—p. 191.
Muscle of Micturition: Its Role in Sphincter Mechanism with Reference to Incontinence in Female. W. T. Kennedy.—p. 206.
Total Abdominal Hysterectomy: Study of 500 Cases. W. C. Danforth. —p. 218.
Manchester Operation, with Special Reference to Parturition and Complete Prolapse: Report of 206 Cases. C. A. Gordon.—p. 228.
Evaluation of Extraperitoneal Cesarean Section. S. A. Cosgrove and E. G. Waters.—p. 237.
Discussion of Pelvic Variation and Report on Findings in 100 Negro Women. H. Thoms.—p. 248.
Value and Limitations of Pelvioradiography in Management of Dystocia, with Special Reference to Midpelvic Capacity. A. Weinberg and S. J. Scadron.—p. 255.
*Heart Disease in Pregnancy. W. B. Stromme and Katherine Kuder. —p. 264.
Veratrum Viride in Treatment of Toxemias of Pregnancy. J. R. Willson. —p. 273.
Treatment with Massive Arsenotherapy of Early Syphilis Complicated by Pregnancy. A. C. Curtis and G. Morrow.—p. 284.
Critical Study of 390 Major Gynecologic Surgical Procedures. C. M. Malone.—p. 291.
Successful Treatment of Hydramnios with Ammonium Chloride: Preliminary Report. A. A. Abrams and S. B. Abrams.—p. 299.
Extrauterine Pregnancy. A. H. Dindia and V. J. Turcotte.—p. 321.
Spontaneous Rupture of Liver in Eclampsia with Fatal Hemoperitoneum. S. Sanes and C. A. Kaminski.—p. 325.

Aspiration of Stomach Contents into Lungs During Obstetric Anesthesia.—Mendelson says that there have been 66 instances of aspiration of stomach contents into the lungs in 44,016 pregnancies, an incidence of 0.15 per cent. Two entirely different syndromes may follow aspiration. Aspiration of solid food usually produces laryngeal or bronchial obstruction. Complete obstruction produces suffocation. Incomplete obstruction produces massive atelectasis with cyanosis, tachycardia, dyspnea, mediastinal shift and signs of consolidation over the collapsed area. Obstruction should be promptly relieved either indirectly by external stimulation, with encouragement of coughing, or directly with the aid of suction and endoscopic removal. Aspiration of liquid material produces an asthma-like syndrome. There are cyanosis, tachycardia and dyspnea but no mediastinal shift or massive atelectasis. Wheezes, rales and ronchi are heard. X-rays reveal irregular, soft, mottled densities without mediastinal shift. The picture has been misinterpreted as bronchopneumonia, tuberculosis, fungous infection and even metastasis. Progressive cardiac embarrassment and pulmonary edema may supervene. Animal experiments indicate that hydrochloric acid is responsible for these changes. Treatment should be directed against the bronchiolar spasm and cardiac embarrassment. Oxygen, atropine, epinephrine and aminophylline will accomplish these objectives. Should cardiac failure develop, rapid intravenous digitalization is indicated. The circulatory burden may be relieved by the application of tourniquets to the extremities to produce the effect of a *bloodless phlebotomy*. Aspiration of stomach contents into the lungs may be avoided by withholding oral feeding during labor, by wider use of local anesthesia when feasible, by alkalization of the stomach contents and emptying the stomach prior to the administration of a general anesthetic, by competent administration of general anesthesia and by adequate delivery room equipment, including transparent anesthetic masks, tiltable delivery table, suction, laryngoscope and bronchoscope.

Heart Disease in Pregnancy.—Stromme and Kuder report 720 cases of heart disease, which represent 3.02 per cent of the 23,858 pregnancies cared for between 1937 and 1944. They stress the importance of hospitalization prior to labor. Special care must be given to these women in labor. The second stage must be shortened by operative means, particularly in the woman with severe cardiac defects. The authors have noted a trend from cesarean section to forceps deliveries, a greater use of local anesthesia and liberalization in interruption of pregnancies in bad risk cases. These factors explain a lowering of the maternal mortality among cardiac patients from 14.18 to 12.64 per thousand pregnancies. A further lowering of this figure is possible through better cooperation in early registration and through improvement in selection of patients for therapeutic abortion, earlier interruption and sterilization. Infantile mortality is essentially unaffected by maternal heart disease.

American Journal of Surgery, New York

72:*145-288 (Aug.) 1946*

Conservative Gynecology. A. E. Hertzler.—p. 147.
*Boiled Cartilage Implants. C. Firestone.—p. 153.
Rupture of Lower Lumbar Intervertebral Disks. M. K. King.—p. 161.
Advantages of Gridiron Incision in Treatment of Carbuncles. U. Maes and E. C. Heringman.—p. 166.
*Late Repair of Tendons in Hand. G. V. Webster.—p. 171.
*Splenectomy in Familial Hemolytic Jaundice: Study and Cure of Patient with Normal Erythrocyte Fragility and Other Unusual Features. L. H. Eisendorf and J. R. Broun.—p. 179.
Interstitial Hernia: Review of Literature and Report of 3 Cases. A. M. Dickinson.—p. 186.
Incipient Epiphyseolisthesis of Hip: Its Diagnosis and Treatment. S. Kleinberg.—p. 190.
Carcinoma of Stomach. P. B. Hudson and R. Alt.—p. 202.
Skin Dressings in Treatment of Debrided Wounds. E. C. Gay.—p. 212.
Regional Anesthesia: Its Advantages in Emergency Surgery of Extremities. G. A. P. Hurley.—p. 219.
Pilonidal Cysts: Treatment by Marsupialization Operation. C. Bunch. —p. 229.
Use of Transversus Abdominis in Repair of Indirect Inguinal Hernia. E. F. McLaughlin.—p. 232.
Ultraviolet Blood Irradiation in Biliary Disease: Knott Method. R. C. Olney.—p. 235.
Physiology of Nose and Its Relation to Plastic Surgery. E. S. Lamont. —p. 238.
Hemolytic Streptococcus in Wounds of Rabbits: Action of 5-Nitro-2-Furaldehyde Semicarbazone. E. Neter and T. G. Lamberti.—p. 246.
New Operation for Dislocated Septal Cartilage. R. Kayser.—p. 248.
Method of Pelvic Measurement. D. I. Solomon.—p. 252.
Koroseal: *Rubber Substitute.* W. L. Green.—p. 254.
Indirect Inguinal Hernia: Repair of Anatomically Weak Area. D. Brezin. —p. 256.
Intra-Abdominal Placement of Drugs: Simple Method. J. T. Colley and R. H. Clifford.—p. 257.

Boiled Cartilage Implants.—Firestone uses cartilage from subjects who have been prepared for burial. The cartilage is vigorously boiled for twenty minutes and then placed in a 50 per cent solution of alcohol and kept there at room temperature until the need for it arises. At that time pieces of desirable size are removed from the alcohol, washed in tap water, wrapped in gauze and boiled vigorously for twenty minutes in the sterilizer, together with the instruments. The boiling removes all trace of the preservative. They are then brought to the operating room, shaped to fill the particular contour deformity, perforated and implanted in the routine manner. Cartilage from Negro and Japanese subjects were implanted, together with cartilage from Caucasians, into the same Caucasian recipients. Results have been uniformly favorable. Heterocartilage (bovine) is transplantable to man and holds promise of becoming the implant of choice, because of its coefficient of increased reaction in locations where subcutaneous soft tissues require elevation.

Late Repair of Tendons.—Webster points out that primary suture of flexor tendons in the fingers still results in failure at the hands of all but a few experts, and most of these cases result in disabilities which require late plastic repair. If infection has occurred, if foreign bodies have remained in the wound or if multiple surgical procedures have been performed, late tendon repair offers only a fair chance for recovery of function. If fingers have been ruthlessly opened, cutting across flexion creases at right angles and destroying the "pulley" mechanism in the fingers, little hope can be given for restoration of function. Some of these cases can be improved by excision of all volar scar and replacement with a pedicle flap of skin and fat. A hand with flexible joints, intact nerves and good circulation presents the ideal situation for late tendon repair. A final evaluation of results should be deferred for a year to eighteen months. Tendons, like bones, aline their structure in the direction of the stress which is put on them, and often a finger which flexes poorly at three months will be improved at six months and with active exercise it may be moving well six months to a year later. Premature reexploration of a finger that has been operated on may forfeit all chance of final improvement. The author stresses the importance of knowledge of anatomy, of a bloodless field, of carefully planned incisions and of closure of wounds without buried sutures. The cooperation of the patient must be excellent. Good results are frequent, but excellent results are rare.

Splenectomy in Familial Hemolytic Jaundice.—Eisendorf and Broun report a case of congenital hemolytic icterus which was cured by splenectomy. The following unusual features were presented: the fragility of the erythrocytes was normal; microspherulosis was minimal; the liver damage was improved by splenectomy and an unusual postoperative hemolytic crisis resulted with a drop in the erythrocyte count to two and a half million.

American Review of Soviet Medicine, New York

3:481-590 (Aug.) 1946

Repair of Defects and Fistulae in Urinary Bladder. A. P. Frumkin. —p. 484.
*Use of Cellophane in Treatment of Wounds. N. L. Chistyakov.—p. 490.
Fermentation in Pus. L. G. Smirnova and V. N. Tyunina.—p. 494.
Physicochemical Nature of Antibiotic Action. W. A. Dorfman, E. A. Moldavskaya, T. L. Kastorskaya and P. S. Zasypkina.—p. 500.
Bacteriostatic Substances of Animal Origin. A. S. Konikova, A. P. Urasova and R. M. Asarkh.—p. 511.
*Vaccination Against Typhus. M. K. Krontovskaya.—p. 515.
Specific Prophylaxis and Early Diagnosis of Typhus. A. A. Smorodintsev. —p. 522.
Significance of Basic Argyrophil Substance in Pathogenesis of Hypertension. A. I. Smirnova-Zamkova.—p. 534.
Balneologic Treatment of Chronic Osteomyelitis. V. A. Alexandrov. —p. 539.

Cellophane in Treatment of Wounds.—Chistyakov used cellophane gauze dressing in the treatment of superficial and deep gunshot wounds in their later stages and in open and closed operative wounds. Cellophane is applied directly over the affected part and will not absorb any secretions. The space between the cellophane layer and the wound gradually fills with secretions, which escape at the wound edges, where they are absorbed by the superimposed layer of gauze. The exudate at the bottom and around the edges of the wound underneath the cellophane prevents drying. The retained moisture is highly desirable for normal healing. The protective covering of cellophane keeps the wound at body temperature, which is essential for tissue regeneration. Cellophane does not stick to the surface of the wound and can be easily removed without disturbing normal healing. Subsequent dressings can be performed with little pain or discomfort to the patient. At evacuation points a wound can be examined and observed under the cellophane after the covering gauze dressing has been removed. Cellophane dressings are convenient in skin grafting operations, as they protect the wound from drying and do not disturb the grafted epidermis. No delay in healing nor any complications were observed which could be attributed solely to the cellophane gauze dressings.

Vaccination Against Typhus.—Krontovskaya obtained large quantities of Rickettsia prowazeki from the lungs of white mice by infecting the animals with material obtained from the tunica vaginalis of diseased guinea pigs. The material was instilled intranasally into the mice. For continued passage and for the preparation of vaccine, the lungs of the mice were removed aseptically. An emulsion of the lung tissue containing a great number of extracellular Rickettsia prowazeki was made, isotonic solution of sodium chloride containing 0.2 per cent formaldehyde added and fractional centrifugation done. A suspension of clean, washed-out Rickettsia prowazeki was obtained and diluted according to a standard with isotonic solution of sodium chloride containing 0.2 per cent of formaldehyde. Experiments on guinea pigs and serologic studies on human subjects were made which suggest that the vaccine is harmless. It causes only mild and general reactions and increases specific antibodies in the serums of vaccinated persons. From statistical material and observation on 200,000 persons among medical personnel and populations in the formerly occupied territories, it appears that the type of typhus developed by vaccinated persons was atypical and abortive, preceded by a long incubation period of twenty-three days, with moderate fever lasting six to seven days. Patients recovered rapidly. The changes following vaccination suggest that the vaccine has a specific antigenic value.

American Review of Tuberculosis, New York

54:1-96 (July) 1946

Apical Tuberculosis: Roentgenologic Technic for Its Early Recognition, with Some Pathogenetic Applications. A. J. Flaxman.—p. 1.
Employment of Ex-Tuberculous Patients. H. S. Willis.—p. 9.
Patients' Information About Tuberculosis: Survey with Standardized Questionnaire. J. Newman.—p. 13.
*Results of Pneumolysis. Henriette Marcus and M. Pinner.—p. 25.
*Vaccination with Vole Bacillus (Wells): Protective Value of Percutaneous and Intracutaneous Vaccination (Observations on Multiple Puncture Vaccination on Man). K. Birkhaug.—p. 41.
R1 Strain of Tubercle Bacillus: Its Dissociation and Virulence of Variants in Normal and Silicotic Guinea Pigs. W. Steenken Jr. and L. U. Gardner.—p. 51.
History of H37 Strain of Tubercle Bacillus. W. Steenken Jr. and L. U. Gardner.—p. 62.
Cultures of Pulmonary Secretions: Their Accuracy in Evaluation of Activity in Pulmonary Tuberculosis. L. L. Sanford.—p. 67.
Plasma and Urinary Ascorbic Acid in Tuberculous Patients. Elizabeth Y. Webb, Clara A. Storvick and K. B. Olson.—p. 74.
Effects of Intranasal Inoculation with Tubercle Bacilli on Vitamin A Stores and Tissues of Mice and Rats. A. B. McCoord, C. P. Katsampes and S. W. Clausen.—p. 84.

Results of Pneumolysis.—Marcus and Pinner studied the records of 302 consecutive patients who were subjected to thoracoscopy during the course of treatment for pulmonary tuberculosis. Thirteen of the 302 patients had bilateral simultaneous pneumothorax and thoracoscopy was performed on each side, thus bringing the total pneumothoraces under consideration up to 315. Complete pneumolysis was performed 88 times, partial pneumolysis was performed 142 times, insignificant pneumolysis was performed 31 times and thoracoscopy only was performed 140 times, so that the total number of operations was 401. As a result of 315 pneumothoraces 126 patients (40 per cent) were benefited by the operative procedure directly, while 125 (39.7 per cent) did well during the later course of observation, some by the institution of other treatment. All but 42 patients (13.9 per cent) have been observed for from two to more than six years. Serious complications were generally due to the development of postoperative empyema, the incidence of which was 4 per cent in 401 operations. Ten of 16 patients who developed empyema died, an incidence of 3.2 per cent for the total number of 302 patients. The authors feel that a conservative attitude in approaching adhesions is justified.

Vaccination with Vole Bacillus.—Birkhaug compared the protective value of the multiple puncture and intravenous vaccination of guinea pigs with the vole bacillus. Ninety days after the vaccination with the vole bacilli all animals in the multiple puncture, intracutaneous and control groups were inoculated subcutaneously with 0.00001 mg. of human virulent tubercle bacilli. Quantitative assessment of tuberculous hyperplasia of the various lymph nodes and viscera revealed that the vaccination with the vole bacillus offers a relatively high protection against a test infection with virulent human tubercle bacilli and that the multiple puncture method yields results which lie slightly ahead of those observed with the intracutaneous method. In a small series of human experiments the vole bacillus vaccine and the BCG vaccine were applied with the multiple puncture method to 12 women between the ages of 17 and 44 and to 6 men between the ages of 17 and 41. Multiple puncture vaccination with the vole bacillus (Wells) produced more permanent vaccination marks and stronger tuberculin reactions than a similar vaccination with BCG, suggesting a lesser margin of safety for the vole bacillus as a vaccine for use on man.

Annals of Allergy, Minneapolis

4:247-338 (July-Aug.) 1946

Bronchial Asthma in Young Male Adult: Study of 100 Hospitalized Patients in an Army General Hospital, with Special Reference to Nasal Symptoms and Findings. F. L. Rosen.—p. 247.
Influence of Liver in Anaphylactic Shock: Experimental Study. A. Graña.—p. 261.
*Mango Dermatitis and Its Relationship to Poison Ivy Hypersensitivity. H. Keil, D. Wasserman and C. R. Dawson.—p. 268.
Some Clinical Observations on Use of Benadryl for Symptomatic Relief of Allergic Conditions: Report of 188 Cases. L. C. Todd.—p. 282.
*Benadryl in Treatment of Erythema Exudativum Multiforme. H. Pinkus. —p. 288.
Sensitivity to Thiamine Hydrochloride: Potential Hazard in Common Office Procedure. H. T. Engelhardt and V. C. Baird.—p. 291.
Malaria and Urticaria. H. H. Golz.—p. 293.
Generalized Chronic Dermatitis Due to Tattoo: Case. B. Swinny. —p. 295.

Mango Dermatitis and Poison Ivy Hypersensitivity.—Keil and his associates report a case of mango dermatitis. This type of dermatitis is likely to be encountered with increasing frequency owing to the increasing consumption of the fruit and to the close immunologic relation to hypersensitiveness to poison ivy and related plants. Experimental studies on 39 subjects showed that the irritant is the stem sap which often contaminates the external surface of the peel. The majority of the 39 subjects had had no prior contact with the mango fruit. Based on the responses to 3-n-pentadecyl catechol, which was the standard method of detecting hypersensitiveness to poison ivy, the subjects could be classified in two categories: 1. A group of 14 persons who were not sensitive to poison ivy, all of whom showed negative responses to various portions of mango fruit, including the stem sap. 2. A group comprising 25 persons sensitive to poison ivy, 9 of whom were seen in a clinical attack of poison ivy dermatitis. In this group cross reactions were obtained from stem sap in 14 of 21 persons and from the internal surface of the peel in 6 of 24 persons. When comparisons were made on a quantitative basis it was found that the specimen of mango stem sap was about equivalent in its cutaneous effects to 0.1 per cent 3-n-pentadecyl catechol. All subjects who were observed in a clinical attack of poison ivy dermatitis showed positive patch tests to the stem sap and some of them to the internal surface of the peel. The possibility that persons sensitive to poison ivy are more easily sensitized to the mango plant was illustrated by 2 persons in the control group.

Benadryl in Erythema Exudativum Multiforme.—Pinkus used benadryl in 2 cases of idiopathic erythema multiforme in which high doses of sodium salicylate had produced only temporary alleviation. The cutaneous and general symptoms were relieved in both cases with surprising promptness by comparatively small doses of benadryl. Two later recurrences in 1 of the cases also responded quickly to the same therapy. One case of toxic erythema following vaccination and 1 of erythematous drug eruption subsided with similar rapidity.

Archives of Neurology and Psychiatry, Chicago

56:133-244 (Aug.) 1946

Course and Rate of Regeneration of Motor Fibers Following Lesions of Radial Nerve. S. Sunderland.—p. 133.
*Electric Shock Therapy of Elderly Patients. F. Feldman, S. Susselman, B. Lipetz and S. E. Barrera.—p. 158.
Pattern of Metabolic Depression Induced with Pentothal Sodium. B. Etsten, G. E. York and H. E. Himwich.—p. 171.
Effects of Antibiotic Substances on Central Nervous System. H. C. Johnson, A. E. Walker, T. J. Case and J. J. Kollros.—p. 184.
Abnormal Delay of Visual Perception. E. Sachs.—p. 198.
Dominant Brain Wave Frequencies as Measures of Physicochemical Processes in Cerebral Cortex. I. C. Kaufman and H. Hoagland. —p. 207.
Is Restoration of Inhibited Conditioned Reactions by Insulin Coma Specific for Pavlovian Inhibitions? Contribution to Theory of Shock Treatment. E. Gellhorn.—p. 216.

Electric Shock Treatment of Elderly Patients.—Feldman and his associates present observations on 53 patients over 65 years of age who were subjected to shock treatment at the Albany Hospital. The significance of an impaired cardiovascular system in the patient with serious mental illness must be evaluated in terms of what the future holds for the patient with and without treatment. When a diagnosis other than senile dementia can be made in a patient over 65, especially that of depressive, manic or paranoid psychosis, electric shock treatment should be considered. The only contraindications should be extreme defects in the physical state, particularly in the cardiovascular system. The value of the treatment is seen in the high proportion of patients returned to their homes as either recovered or much improved. The figures for improvement compare favorably with those obtained in the treatment of younger patients with similar conditions, especially the depressions. The paranoid states responded least well, with 3 failures among 6 patients. The psychoneuroses, while not showing complete recovery, were greatly improved in the majority of cases.

Archives of Ophthalmology, Chicago

36:135-262 (Aug.) 1946

*Changes in Lens of Embryo After Rubella: Microscopic Examination of 8 Week Old Embryo. F. C. Cordes and Aleta Barber.—p. 135.
Night Vision: I. Comparison of the Scotopic Visual Ratings of Young Japanese and Caucasian Adults Living in Hawaii. W. J. Holmes.—p. 141.
Depth Perception and Flying Ability. L. S. S. Kirschberg.—p. 155.
Clinical Aspects of Stereopsis. C. McCulloch and Margaret Crush.—p. 171.
Alkali Burns of Eye: II. Clinical and Pathologic Course. W. F. Hughes Jr.—p. 189.
Animal Operating Equipment for Experimental Ocular Surgery. H. M. Katzin.—p. 215.
Scotoma as Complication of Decompression Sickness. R. H. Whitten.—p. 220.

Changes in Lens of Embryo After Rubella.—Microscopic examination of the eye of a 7 to 8 week embryo with a history of rubella during the sixth week of pregnancy revealed to Cordes and Barber definite changes in the lens. The lens showed retardation of development and differentiation, while the posterior segment of the eye seemed normal. The absence of the protection of the lids and of Descemet's and Bowman's membranes during the first three months of pregnancy may permit the toxic agent in the amniotic fluid to act directly on the lens during this time. The presence of these barriers after the third month may explain the absence of initial changes in the lens after that time. The study of more specimens is necessary in order to evaluate the changes reported here.

Bull of the U. S. Army Med. Dept., Washington, D. C.

6:91-202 (Aug.) 1946

Pulmonary Infarction. J. Chasnoff.—p. 125.
Surgery in the Field for Wounds of Abdomen. F. B. Berry.—p. 140.
Tropical Acne. M. B. Sulzberger, F. Addenbrooke, S. J. Joyce, S. Greenberg and A. G. Mack.—p. 149.
Mobile Laboratory in North Africa. G. H. Gowen.—p. 155.
Administrative Aspect of Combat Neurosis. M. Hayman.—p. 160.
Convalescence from Scrub Typhus. B. J. Romeo.—p. 167.
Preventive Medicine. P. S. Strong.—p. 174.
Trichomonad and Hemoproteus Infections. C. A. Gleiser and R. H. Yager.—p. 177.

California Medicine, San Francisco

65:1-42 (July) 1946

Technic and Interpretation of Lower Extremity Venograms. E. R. Miller.—p. 1.
Hypoparathyroidism. W. P. Kroger.—p. 3.
Use of Anticoagulants Heparin and Dicumarol. S. P. Lucia.—p. 5.
Prepayment and Future of American Medicine. J. C. McCann.—p. 9.
What War Taught About Amputations. P. F. Olson.—p. 16.
Maternal, Fetal and Neonatal Mortality. D. G. Morton.—p. 18.
Pyelitis of Pregnancy. W. D. Clark.—p. 21.

65:43-92 (Aug.) 1946

Demerol Analgesia in Obstetrics. A. Maximov.—p. 43.
*Treatment of Thromboembolism by Vein Interruption. L. Goldman and S. G. Johnson.—p. 47.
Coccidioidin Skin Test in Panama Canal Zone: Results of Brief Survey in Tuberculous and Nontuberculous Patients. H. A. Tucker.—p. 52.
Poliomyelitis in San Francisco. J. C. Geiger.—p. 53.
California Public Health Laboratories and Their Services to Physicians. M. H. Merrill.—p. 56.
Practical Application of Newer Methods in Control of Rodent and Insect Pests. H. F. Gray.—p. 61.
Malpractice Litigation as It Concerns the Dermatologist. C. E. Counter.—p. 64.

Vein Interruption in Thromboembolism.—Goldman and Johnson review observations in 71 cases of thromboembolism encountered in the University of California service at the San Francisco City and County Hospital during a period of twenty-six months between 1943 and 1945. Ligation of the iliofemoral venous system was resorted to in 25 cases, 30 were treated by other means than ligation, and 16 were not diagnosed until necropsy and were not treated. The authors stress that ligation or interruption of the iliofemoral veins is a life saving procedure in patients who have had pulmonary embolism. It should be carried out early in order to prevent extension of the thrombus into the pelvic veins with resultant phlegmasia alba dolens and persistent edema. Vein ligation should not be postponed until the patient has had multiple pulmonary infarctions. Bilateral rather than unilateral ligation is preferable because the pathologic process may be symmetrical even though there are no clinical findings in one extremity. In patients with adherent vein thrombosis (thrombophlebitis) ligation should be done proximal to the thrombus. Edema is no more severe when ligation is done than when it is not and is usually lessened if ligation is carried out early.

Cancer Research, Baltimore

6:449-528 (Sept.) 1946

*Pathologic Effects of Instantaneous Dose of Radiation. S. Warren.—p. 449.
Carcinogenic Activity of Some New Derivatives of Aromatic Hydrocarbons: II. Compounds Related to 1,2-Benzanthracene. C. E. Dunlap and S. Warren.—p. 454.
Effect of Diets Containing Abundance of Milk, Liver, Riboflavin and Xanthine on Methylcholanthrene Carcinogenesis. L. C. Strong and F. H. J. Figge.—p. 466.
Pathology of Malignant Histiocytoma (Reticuloendothelioma) of Liver in Mice. P. A. Gorer.—p. 470.

Pathologic Effects of Instantaneous Dose of Radiation.—Warren presents studies on the atomic bomb effects at Nagasaki and Hiroshima, which were carried on under the direction of the Naval Medical Research Institute and the Naval Technical Mission to Japan. Particular attention was given to the injuries due to radiation, although as the patients were studied it became apparent that the same one might be suffering from blast effect, thermal injury and radiation injury simultaneously. Two stages of radiation injury are differentiated, the immediate and the delayed. As the result of the extreme disorganization no adequate material exists to determine the exact nature of immediate effects, but Warren assumes that there is little morphologic evidence other than leukopenia and loss of adrenal lipoid. Material on the delayed effects was extensive. Over 800 patients were hospitalized by the author's group and about 13,000 were surveyed. Most leukopenic deaths occurred during the first three weeks subsequent to the bombing. From three to five weeks after the bombing a considerable number of hemorrhagic deaths occurred, associated with the thrombocytopenia induced by radiation damage to the megakaryocytes of the bone marrow. Those with serious bone marrow damage who weathered the first few weeks showed later anemic manifestations, with red blood cell counts in some instances dropping to 1 million or below. The gonadal effect was much more prominent in the testis than in the ovary.

Connecticut State Medical Journal, Hartford

10:625-736 (Aug.) 1946

Medicine During World War II. P. H. Long.—p. 627.
Transverse Myelitis. J. C. Allen.—p. 637.
Treatment of Psychopathic Personality. F. S. DuBois.—p. 640.
Legg-Perthes' Disease: Report of 5 Cases in Adult Men. F. D. T. Bowen.—p. 644.
Voluntary Funds in Cancer Control. E. R. Meiss.—p. 648.
Organization of Group Clinic. D. K. Bartlett Jr.—p. 650.
Job of State and County Societies in Medical Public Relations. C. C. Burlingame.—p. 655.

10:737-814 (Sept.) 1946

Nutrition During Pregnancy. Bertha S. Burke.—p. 744.
Physiologic Basis of Electric Convulsive Therapy. W. T. Liberson.—p. 754.
Use of Curare in Shock Therapy in Cases Complicated by Pathologic Skeletal Conditions. B. H. Gottesfeld.—p. 756.
Fluorine, Deterrent in Dental Caries. F. M. Erlenbach.—p. 759.
Periarteritis Nodosa (Neuromuscular Type). H. H. Irwin and C. M. Mezey.—p. 761.
Optic Neuritides. F. L. P. Koch.—p. 763.
Tumor Clinic in Small Hospital. L. G. Simon.—p. 765.
Significance of Comprehensive Medical Care. D. P. Barr.—p. 767.

Gastroenterology, Baltimore

7:1-152 (July) 1946

*Results of Hepatic Tests in Chronic Hepatitis Without Jaundice. J. R. Neefe.—p. 1.

Study of Time of "Healing" of Peptic Ulcer in Series of 69 Cases of Duodenal and Gastric Craters. G. M. Cummins, M. I. Grossman and A. C. Ivy.—p. 20.

*Nocturnal Gastric Secretion: II. Studies on Normal Subjects and Patients with Duodenal Ulcer. D. J. Sandweiss, M. H. F. Friedman, M. H. Sugarman and H. M. Podolsky.—p. 38.

Complications of Chronic Nonspecific Ulcerative Colitis. W. E. Ricketts and W. L. Palmer.—p. 55.

Etiology of Ulcerative Colitis: Analytic Review of Literature. R. S. Ginsberg and A. C. Ivy.—p. 67.

Some Results of Gastric Secretory Response of Patients Having Duodenal Ulcer Noted During Administration of Benadryl. R. U. Moersch, A. B. Rivers and C. G. Morlock.—p. 91.

Clinical Observations on Use of Benadryl: Its Effect on Histamine Induced Gastric Acidity in Man. T. W. McElin and B. T. Horton.—p. 100.

Separation and Assay of Secretin and Cholecystokinin. H. Doubilet.—p. 108.

Hepatic Tests in Chronic Hepatitis Without Jaundice.—In the course of investigations on infectious hepatitis in human volunteers, Neefe observed 4 cases of chronic hepatitis without jaundice. The chronic form of the disease followed an attack of acute infectious hepatitis with jaundice, although in case 2 the icterus associated with the acute attack was transient and subclinical. In cases 1, 2 and 3 the acute hepatitis had been induced by the oral administration of a feces preparation known to contain the causative agent of infectious (epidemic) hepatitis. In the fourth case, observed in a hospital, the infectious hepatitis had been acquired under natural circumstances. In all these cases the duration of the illness exceeded seven months and a diagnosis of chronic hepatitis without jaundice was made on the basis of the history, the clinical manifestations, laboratory evidence and, in cases 1 and 2, on the microscopic findings in liver biopsy specimens obtained nine and six months respectively after the onset of acute hepatitis. The course of the disease after the seventh month was one of progressive improvement, and in 2 cases complete recovery appears to have been achieved. In the later stages of the disease, it was found that the commonly used hepatic tests failed to reveal hepatic disturbance, although incapacitating symptoms continued and liver biopsies showed persistent hepatitis.

Nocturnal Gastric Secretion.—Sandweiss and his associates studied nocturnal gastric secretion in 38 normal subjects and 29 patients with duodenal ulcer. They arrive at the conclusion that following a fairly well balanced meal at 6 p. m. a normal person secretes acid gastric juice during the night. An average of 446 cc. of gastric juice was obtained by continuous suction from 12 midnight to 7 a. m. (minimum 190 cc., maximum 800 cc.). There is no statistically significant difference in the volume and total output of acid of nocturnal gastric secretion of normal subjects and patients with uncomplicated duodenal ulcer when determined by continuous aspiration. The greater volume of gastric juice observed when intermittent single aspirations are made from patients with uncomplicated duodenal ulcer is not due to gastric hypersecretion. The authors emphasize the need for additional studies on nocturnal gastric secretion on both normal subjects and ulcer patients by the continuous aspiration method.

Journal of Aviation Medicine, St. Paul

17:207-270 (June) 1946

Electrocardiograms of Older Pilots. F. A. L. Mathewson and A. H. Sellers.—p. 207.

Fatal Aviation Accidents. M. M. Kalez and R. C. Hovde.—p. 234.

Analysis of Symptoms Causing Forced Descents in Altitude Chambers at San Antonio Aviation Cadet Center. G. P. Fulton and S. Phillips.—p. 244.

Physical Fatigue in Single Control Military Aircraft. H. R. Bierman.—p. 253.

Incidence and Relation of Syncope to Decompression Sickness. B. R. Brown.—p. 257.

Studies of Effects of Morphine at Simulated High Altitudes and Its Use for Relief of Pain of Decompression Sickness. P. K. Smith.—p. 265.

Psychologic Requirements in Aviation Equipment Design. P. M. Fitts.—p. 270.

Journal of Experimental Medicine, New York

84:113-190 (Aug.) 1946

Reactions of Monkeys to Experimentally Induced Influenza Virus A Infection: Analysis of Relative Roles of Humoral and Cellular Immunity Under Conditions of Optimal or Deficient Nutrition. S. Saslaw, H. E. Wilson, C. A. Doan, O. C. Woolpert and J. L. Schwab.—p. 113.

Type Specific Protection and Immunity Following Intranasal Inoculation of Monkeys with Group A Hemolytic Streptococci. R. F. Watson, S. Rothbard and H. F. Swift.—p. 127.

Preparation and Properties of Shiga Toxin and Toxoid. Rene J. Dubos and J. W. Geiger.—p. 143.

Fate of Injected Particulate Antigens in Relation to Formation of Antibodies. T. N. Harris and W. E. Ehrich.—p. 157.

Specificity of Serologic Precipitation. F. Lanni.—p. 167.

Effect of In Vitro Cultivation on the Pathogenicity of West Nile Virus. H. Koprowski and E. H. Lennette.—p. 181.

84:191-276 (Sept.) 1946

Inhibition of Phosphorylation of Glucose in Mouse Brains by Viruses and Its Prevention by Preparations of Diphosphopyridine Nucleotide. E. Racker and I. Krimsky.—p. 191.

Effect of In Vitro Cultivation on Pathogenicity of Venezuelan Equine Encephalomyelitis Virus. H. Koprowski and E. H. Lennette.—p. 205.

Production of Chronic Glomerulonephritis in Rats by Injection of Rabbit Anti-Rat Placenta Serum. Beatrice Carrier Seegal and Emily Nichols Loeb.—p. 211.

Studies on Flexner Group of Dysentery Bacilli: IV. Serologic and Toxic Properties of Somatic Antigens. E. Perlman and W. F. Goebel.—p. 223.

Id.: V. Quantitative Study of Serologic Cross Reactions. E. Perlman and W. F. Goebel.—p. 235.

Further Studies on Effects of Tissue Extracts on Staphylococcus Aureus. L. G. Nutini and Eva Maria Lynch.—p. 247.

Reactions of Monkeys to Experimentally Induced Streptococcus Hemolyticus, Group C, Infection: Analysis of Relative Roles of Humoral and Cellular Immunity Under Conditions of Optimal or Deficient Nutrition. S. Saslaw, H. E. Wilson, C. A. Doan, O. C. Woolpert and J. L. Schwab.—p. 263.

Journal of Lab. and Clinical Medicine, St. Louis

31:721-828 (July) 1946

*Nutritional Survey of Starvation in Group of Young Men. C. S. Davidson, H. L. Wilcke and P. J. Reiner.—p. 721.

Action of Thiobismol on Therapeutic Quartan Malaria. L. I. Kaplan, H. S. Read and F. T. Becker.—p. 735.

Distribution of Atabrine in Blood, Skin and Its Appendages: Methods for Rapid and Simple Detection of Presence of Atabrine in Blood, Skin and Nails. K. Lange and M. J. Matzner.—p. 742.

Pyribenzamine (N'-Pyridyl-N'-Benzyl-N-Dimethylethylene-Diamine HCl), an Antagonist of Histamine. R. L. Mayer, H. W. Hays, D. Brousseau, D. Mathieson, B. Rennick and F. F. Yonkman.—p. 749.

Studies on Toxicity of Sulfonamide Drugs: I. Porphyrin Excretion by Patient Treated with Sulfadiazine and Later with Sulfanilamide. F. H. J. Figge, T. N. Carey and G. S. Weiland.—p. 752.

Observations on Activity in Vitro of Succinylsulfathiazole and Phthalylsulfathiazole. H. J. Florestano and J. F. Kennedy.—p. 757.

Fate of Sodium Ricinoleate After Oral Administration to White Rats. E. L. MacQuiddy, Elizabeth Pinkerton, H. Goetze and F. W. Oberst.—p. 763.

Observations on Effect of Lowered Oxygen Tension on Sicklemia and Sickle Cell Anemia Among Military Flying Personnel. A. B. Henderson and H. E. Thornell.—p. 769.

Bone Marrow in Hemophilia During Life: Study of Cellular Elements and Coagulation Time of Marrow Blood. L. R. Limarzi, H. G. Poncher and C. L. Birch.—p. 777.

Unusual Case of Generalized Anasarca Appearing in Impounded Dog with Cirrhosis of Liver. Lillian Eichelberger and M. Roma.—p. 785.

Sensitization of Rh Positive Patients by Rh Factor. L. J. Unger.—p. 793.

Traumatic Effects of Positive Intratracheal Pressures. H. Tatum and A. M. Ginzler.—p. 799.

Starvation in Young Men.—Davidson and his associates present observations on 171 men suffering from a severe degree of starvation. The men were German prisoners who were seen between two and three months after imprisonment; during this interval the value of the food eaten varied between 650 and 850 calories daily. Food eaten before the time of capture may not have been entirely adequate. Extreme wasting was evident and was usually associated with lethargy, a stooped posture, weakness and often syncope. Comparison of actual weight with data given in standard height and weight tables showed that all the men were under the standard of weight, the average being 13 Kg. below the standard. Joint pains were common, particularly in the knees. Diarrhea was a frequent complaint. A generalized pigmentation was observed. There was a high incidence of follicular hyperkeratosis, 4 instances of circumcorneal injection, 3 instances of color change in the tongue and 8 instances of papillary atrophy of the tongue. Eye signs suggesting vitamin A deficiency were not observed. A condition resembling acrocyanosis was observed in the distal extremities of many of these men and was often associated with paresthesias. Edema, probably of nutritional origin, was observed in 24 per cent of these men. Hypoproteinemia was common but was not present in a significant number of the men with edema. Anemia was not severe.

31:829-938 (Aug.) 1946

Elimination of Human Reaction Producing Material from Horse Derived Antiserums: Electrical Method. E. Cardone.—p. 829.
Study of Abnormal T Waves in Patients Presenting No Evidence of Organic Heart Disease. I. Stein.—p. 837.
Observations on Effect of Theophylline Aminoisobutanol in Experimental Heart Failure. J. R. Smith and J. Jensen.—p. 850.
Effect of Theophylline Aminoisobutanol on Circulation in Congestive Heart Failure. F. U. Steinberg and J. Jensen.—p. 857.
Stimulation of Central Nervous System by Curare (Intocostrin). Rosellen E. Cohnberg.—p. 866.
Hemoglobin Levels in Specific Race, Age and Sex Groups of Normal North Carolina Population. D. F. Milam and H. Muench.—p. 878.
*Hematologic Survey of Repatriated American Military Personnel. G. E. Cartwright and M. M. Wintrobe.—p. 886.
Absorption and Excretion of Sulfathiazole and Sulfamethylthiadiazole After Oral Administration in Human Beings. M. Meads and M. Finland.—p. 900.
Quantitative Determination of Thymol Turbidity Reaction of Serum. A. B. Ley, Jessica H. Lewis and C. S. Davidson.—p. 910.

Hematologic Survey of Repatriated American Military Personnel.—Cartwright and Wintrobe made hematologic studies on 75 repatriated American prisoners of war selected from a series of 3,000. These men had been on a grossly inadequate diet consisting mainly of rice for an average of 40.1 months. The average weight loss was 37 pounds (17 Kg.). A history of nutritional deficiency as characterized by cheilosis, glossitis, stomatitis, dermatitis and diarrhea was obtained in from 50 to 70 per cent. A history suggesting wet beriberi was obtained in 77 per cent and a history of dry beriberi in about 50 per cent. Among the 75 patients studied in detail, the anemia was macrocytic in 73 per cent, normocytic in 23 per cent and microcytic in 4 per cent. Thrombocytopenia was present in 1 patient who had a mild elevation of the icterus index. In the remaining cases the icterus index was normal. Mild reticulocytosis and leukocytosis, were frequently encountered. Blood films showed numerous macrocytes, anisocytosis, polychromatophilia and an occasional nucleated red blood cell. In approximately half of the men studied, normal serum iron and copper values were found. The other half were characterized by hypoferremia and hypercupremia. It is suggested that most of the men examined probably presented the recovery phase of severe nutritional macrocytic anemia. The 3 cases of microcytic anemia were most likely due to blood loss.

Journal of Nervous and Mental Disease, New York

104:123-236 (Aug.) 1946

Treatment of Psychiatric Disorders Due to Combat by Means of Group Therapy Program and Insulin in Subshock Doses. H. A. Teitelbaum, C. S. Hoekstra, D. N. Goldstein, I. D. Harris, R. M. Woods and D. Cohen.—p. 123.
Use of Bellevue-Wechsler Scale in Clinical Psychiatry, with Particular Reference to Cases with Brain Damage. Rosaline Goldman, M. Greenblatt and G. P. Coon.—p. 144.
Psychiatric Nomenclature: I. Psychiatric Disorders and Reactions: Definitions and Manner of Recording.—p. 180.
Syphilitic Meningitis with Negative Blood and Spinal Fluid Serology: Report of Rare Syndrome. L. I. Kaplan, H. S. Read and F. T. Becker.—p. 200.

Military Surgeon, Washington, D. C.

99:89-176 (Aug.) 1946. Partial Index

Epidemic Hepatitis. B. Lucké.—p. 89.
Venereal Disease Control in Rural Area in Wartime. W. B. Quisenberry and J. N. Dudley.—p. 98.
Notes on the Military Prisoner. H. R. Lipton.—p. 103.
Temporary Facial Prostheses as Aid in Treatment of War Injuries. L. Emory.—p. 105.
Unexplained Amblyopia as Military Problem. J. W. Hallett.—p. 110.
Complications of Scabies. W. M. Libman.—p. 116.
Acute Injuries of First Metacarpal in Military Personnel. R. E. van Demark.—p. 127.
Aid to Handling of Patients in Hip Spica Casts (Report of Case). C. F. Goeringer.—p. 130.
Improvised Oxygen Tent. W. C. Beck and Elizabeth Dunham.—p. 133.
Field Construction of Improved Slit Lamp and Chin Rest. M. N. Young.—p. 134.

Minnesota Medicine, St. Paul

29:641-736 (July) 1946

Sociologic Pathology of Medicine. E. J. Simons.—p. 673.
Brucellosis—Clinical Aspects. W. H. Hall.—p. 679.
Progress in Control of Brucellosis (Bang's Disease) in Domestic Animals. W. L. Boyd.—p. 681.
Treatment of Medical Jaundice. J. L. Diamond.—p. 684.
Hypersensitivity to Penicillin Simulating Serum Sickness. W. S. Eisenstadt.—p. 689.
Ethylene Disulfonate in Allergy. J. S. Blumenthal.—p. 690.
Ruptured Diverticulum of Jejunum. W. R. Bagley and C. M. Bagley.—p. 691.
Industrial Health in Navy War Plants. D. J. Lauer.—p. 693.

29:737-848 (Aug.) 1946

Poliomyelitis: Review of Its Epidemiology, with Especial Consideration of Autarceologic Concept of Immunity. A. G. Berger.—p. 761.
Leprosy. W. J. Simon.—p. 771.
Surgical Treatment of Thrombophlebitis. J. R. Paine.—p. 774.
Anticoagulant Therapy in Postoperative Thrombophlebitis and Pulmonary Embolism. N. W. Barker.—p. 778.
Neonatal Deaths Following Term Deliveries, 1937 to 1945: Cause and Effect Relationships. R. W. Dickman.—p. 783.
Subacute Bacterial Endocarditis with Rupture of Spleen. A. J. Hertzog, G. Nesse and C. Vandersluis.—p. 791.

Missouri State Medical Assn. Journal, St. Louis

43:517-580 (Aug.) 1946

Palliative Roentgen Therapy of Bone Metastases from Breast Carcinoma. L. R. Sante.—p. 533.
Resistance to Antibiotic Agents. R. H. Rutherford, G. H. Marquardt and A. C. Van Ravenswaay.—p. 535.
Treatment of Minor Burns Acquired in Laboratory and at Home. S. Malkiel and W. C. Boyd.—p. 538.
Use of Large Daily Injections of Penicillin Emulsion in Dermatology. C. C. Dennie and D. B. Morgan.—p. 539.

43:581-660 (Sept.) 1946

Water Balance: Normal Mechanism, Methods of Administration, Dangers. R. O. Muether.—p. 599.
Water and Electrolyte Balance in Surgical Patients. R. Elman.—p. 602.
Medical Problems of Acid-Base Balance. J. B. Stubbs.—p. 603.
Thyroid Dysfunction. A. McMahon.—p. 606.

New England Journal of Medicine, Boston

235:179-206 (Aug. 8) 1946

*Schistosomiasis Japonica: Diagnosis and Treatment in American Soldiers. P. K. Mason, W. B. Daniels, F. K. Paddock and H. H. Gordon.—p. 179.
Wartime Activities of the Army Medical Department. N. T. Kirk.—p. 182.
Scurvy: Survey of 241 Cases. I. Dogramaci.—p. 185.
*Tonic Effects of Insulin in Acute Alcoholism. E. G. Vassaf and V. R. Hall.—p. 190.
Diseases of Veins. J. Homans.—p. 193.
Endometriosis of Sigmoid, Rectum, Bladder and Left Ovary.—p. 199.
Benign Gastric Ulcer, with Penetration into Pancreas.—p. 201.

Schistosomiasis Japonica in American Soldiers.—Following the invasion of Leyte, cases of schistosomiasis japonica began to appear among army personnel. Mason and his associates describe investigations on 481 patients. Several weeks after exposure the patients developed chills, sweats, generalized malaise, lethargy, headache, anorexia, mild diarrhea and abdominal pain, with weight loss. Urticaria and jaundice were observed in some cases. Examination revealed a slightly enlarged and tender liver and occasionally an enlarged spleen. Leukocytosis with eosinophilia was usual. Four to nine months after their acute illness, patients were evacuated to this country. On arrival they did not appear ill. The only abnormalities were recurrent cramps and tenderness in the upper abdomen. A slightly enlarged liver was felt in 10 per cent of the patients. During observation for three months or more the patients tended to improve. On discharge almost all were free from symptoms. Eggs were found either overseas or here in 80 per cent of these patients. In the remainder the clinical history was sufficiently characteristic to warrant little doubt of the diagnosis. A persistent eosinophilia was suggestive but not diagnostic of continued activity of the disease. On the basis of comparable series, treatment with antimony and potassium tartrate was found to be much more effective than treatment with fuadin. Significant toxic reactions with antimony and potassium tartrate were rare. It is urged that stool examinations be done repeatedly and by multiple methods on men who have been exposed to this disease so that treatment may be instituted if ova are found.

Tonic Effects of Insulin in Acute Alcoholism.—Vassaf and Hall report observations on 43 patients with uncomplicated alcoholic intoxication who were treated with small doses of insulin but who were not given the usual liberal amounts of dextrose. During the gradual withdrawal of alcohol they were given 10 units of insulin two or three times daily before meals. The insulin-treated cases as compared with the control group showed the following clinical differences: The average speed of the withdrawal period was twice as great. Three times as many patients neither required nor demanded whisky after admission. Subjective comfort during the withdrawal period was increased. Supplementary sedation was greatly reduced, in some cases to zero. The weight gain was increased by threefold, both during the first week of hospitalization and subsequently. Insulin reactions were rare and mild, being readily controlled by oral sugar. The coverage of clinically effective doses of insulin by dextrose as such is apparently not a necessity.

235:207-238 (Aug. 15) 1946

*Scleredema: Systemic Disease. B. L. Vallee.—p. 207.
*Some Unusual Findings in Epidemic of Anterior Poliomyelitis. J. H. Nicholson.—p. 214.
Tetanus, with Death Due to Aseptic Dural Sinus Thrombosis: Case. E. T. Phelps.—p. 218.
Pulmonary Tuberculosis. J. D. Wassersug.—p. 220.
Epidermoid Carcinoma of Bronchus (Grade III).—p. 230.
Bronchiectasis of Left Lower Lobe.—p. 232.

Scleredema.—Vallee says that the condition was first described by Buschke in 1900 and that since then 99 cases have appeared in the literature. To this number he adds 4, all of which were observed at Mount Sinai Hospital within the last six years. The disease is characterized by firm, nonpitting edema, affecting usually the face, neck, scalp, conjunctivas, thorax, occasionally the arms and more rarely the legs, sparing the hands and feet. Pleural effusions, pericardial effusions and hydrarthroses also occur. The pericardial effusions may be localized. The electrocardiogram shows low voltage of the QRS complexes. Young people are affected more frequently than those in the older age groups. Women are affected twice as often as men. The treatment was unsatisfactory. Vallee's therapeutic trials included desiccated thyroid, dihydrotachysterol and anterior pituitary extract. These agents did not contribute greatly to recovery.

Unusual Aspects in Epidemic of Anterior Poliomyelitis—During March and April 1945 a southern army post experienced a short outbreak of anterior poliomyelitis. Within a period of twenty-five days 18 patients with poliomyelitis were admitted to the hospital. All the cases occurred in soldiers; all but 3 were between 18 and 21 years old. The patients showed some unusual findings. There were 10 with bulbar involvement. There were 3 deaths, all of patients with bulbar involvement and all caused by failure of the respiratory center. A large percentage of the patients failed to show the cellular response usually seen in the spinal fluid in poliomyelitis. The albuminocytologic disassociation described in the Guillain-Barré syndrome was found in 3 of the 18 cases in this series.

New Orleans Medical and Surgical Journal

99:1-46 (July) 1946

Treatment of Common Dermatoses of Infancy and Childhood. J. W. Burks Jr.—p. 1.
Lanatoside C (Cedilanid). S. P. Wise.—p. 7.
Congenital Cystic Disease of Lung. J. Gardner.—p. 15.
Bone Marrow in Diseases of Leukopoietic System. G. E. Welch.—p. 21.

99:47-94 (Aug.) 1946

Surgical Treatment of Hernia. H. N. Harkins.—p. 47.
Pulmonary Hypertension. C. J. Ray.—p. 49.
Relation of Hypertension to Vascular Disease. A. V. Mortensen.—p. 56.
Gastric Polyposis. J. H. Rappeport.—p. 71.

Oklahoma State Medical Assn. Jour., Oklahoma City

39:289-326 (July) 1946

Rheumatic Myocarditis. R. H. Bayley.—p. 289.
Endocrine Complaints in Eye, Ear, Nose and Throat Area. E. H. Coachman.—p. 292.
Surgery in Treatment of Stomach and Duodenum. C. C. Fulton.—p. 297.

Pennsylvania Medical Journal, Harrisburg

49:1177-1304 (Aug.) 1946

Report of 13,113 Complete Physical Examinations of Philadelphia Public School Pupils. H. R. Owen and Ruth H. Weaver.—p. 1193.
Laryngeal Stridor in Children. D. S. DeStio.—p. 1195.
Evaluation of Oral Penicillin with Reference to Treatment of Urinary Tract Infections. S. W. Mulholland, L. D. Seager, Ruth E. Miller and W. Shoemaker.—p. 1200.
Gastroduodenal Ulcer. C. H. Arnold.—p. 1205.
Why Neurotics? Veteran Problem: Normal Adjustments of Veterans. C. N. Davis.—p. 1208.
Frigidity in Female. L. F. Ritmiller and R. E. Nicodemus.—p. 1214.
Excision of Pilonidal Cyst and Sinus with Primary Union, Using Local Infiltration and Topical Application of Penicillin Solution. J. S. Lane. —p. 1217.
Implementation of Medical Profession's Program at State Level. L. H. Perry.—p. 1219.
Sound Medical Economics at County Level. W. W. Wilcox.—p. 1225.
Present Economic Trends and State Medical Society. W. L. Estes. —p. 1226.

Plastic and Reconstructive Surgery, Baltimore

1:1-117 (July) 1946

Development of Plastic Surgery in the United States. G. Aufricht. —p. 3.
Present Evaluation of Merits of the Z Plastic Operation. J. S. Davis. —p. 26.
Release of Circular Constricting Scar by Z Flaps. T. W. Stevenson. —p. 39.
Reconstruction of Contracted Axilla. L. E. Sutton.—p. 43.
Early Covering of Extensive Traumatic Deformities of Hand and Foot. J. J. McDonald and J. P. Webster.—p. 49.
Loss of Coverage of Penis, Scrotum and Urethra. D. W. Robinson, Kathryn L. Stephenson and E. C. Padgett.—p. 58.
Closure of Skull Defects. R. Jaeger.—p. 69.
Elongation of Nasal Columella: New Operative Technic. C. LeR. Straith.—p. 79.

Radiology, Syracuse, N. Y.

47:107-212 (Aug.) 1946

Gas Formation in Abdominal Abscesses: Roentgen Study. H. S. Weens. —p. 107.
Lymphoepithelioma. G. M. Tice.—p. 116.
Significance of the Sacroiliac Findings in Marie-Strümpell's Spondylitis. J. Borak.—p. 128.
Solitary Cyst of Calcaneus. B. Copleman, M. F. Vidoli and F. J. Crimmings.—p. 142.
*Pulmonary Torulosis. J. B. Hamilton and G. R. Tyler.—p. 149.
Congenital Cystic Disease of Lung. W. Savain and J. E. Bryant. —p. 156.
Normal Lateral Retrograde Pyelogram. J. M. Dell Jr. and C. H. Barnwell.—p. 163.
Measurement of Resolving Power of Intensifying Screens. W. W. Van Allen and R. H. Morgan.—p. 166.
Roentgen Findings in Erythema Nodosum. W. L. Bonnet.—p. 175.
Versatile Erect Bucky for Private Office Radiography, with Description of Horizontal Bucky Table Mounted on Floor Track. G. W. Heublein. —p. 178.
Unsuspected Pneumoperitoneum. H. A. Cole and C. J. Berne.—p. 183.
Absorption of Pantopaque Following Myelography. W. G. Peacher and R. C. L. Robertson.—p. 186.

Pulmonary Torulosis.—Hamilton and Tyler report 1 case of Torula infection involving both the central nervous system and lungs in a woman aged 24. Mild symptoms such as pleuritic pain and mild cough called attention to the pulmonary infection. A round opacity having the characteristics of an inflammatory lesion in the upper portion of the left lower lobe was demonstrated on roentgenologic examination. Symptoms referable to the central nervous system were manifested four months after the occurrence of the lung lesion. Spinal fluid cultures revealed a budding yeast organism typical of Torula histolytica. Saturated solution of potassium iodide 3 minims (0.2 cc.) three times daily was given, and the dosage was eventually increased to 15 minims (1 cc.) three times daily. One week after institution of this treatment a chest roentgenogram showed partial clearing of the lung lesion, but no clinical improvement occurred. Sulfathiazole, acriflavine and 110,000 units of penicillin proved ineffective. The neurologic symptoms increased and death ensued seven months after the onset of the first pulmonary symptoms. The possibility of pulmonary torulosis should be borne in mind when there is a persistent asymptomatic or relative asymptomatic parenchymal lesion which has inflammatory characteristics and which is resistant to diagnosis by ordinary laboratory procedures, especially if the patient is showing no evidence of a malignant neoplasm.

The changes occurring in the lungs, as reported by others, may assume various appearances and are not characteristic of the disease but usually suggest the possibility of tuberculosis. The lung lesion may precede by months the onset of central nervous system symptoms.

Rhode Island Medical Journal, Providence

29:485-568 (July) 1946

Virus Type of Infectious Hepatitis. G. Blumer.—p. 499.
Progress in Cerebral Palsy. E. Denhoff.—p. 505.
Preliminary Report on Crawford Allen Hospital for Rheumatic Children. W. T. Zimdahl.—p. 514.
Evolution of Medical Record. H. B. Moor.—p. 523.
Cash Sickness in Rhode Island: Review of Annual Report on Cash Sickness Compensation in Rhode Island and Recent Amendments to Law. J. C. Ham, R. C. Hudson, D. A. Smith and others.—p. 532.
Medical Needs of Rural Communities. G. M. Putnam.—p. 553.

29:569-640 (Aug.) 1946

Surgical Management of Carcinoma of Colon and Rectum. T. E. Jones. —p. 583.
Gastritis Among Navy Personnel. R. S. Bray.—p. 586.
Conservation of Pulmonary Function in Treatment of Chest Casualties. D. B. Jennison.—p. 589.
A. M. A. House of Delegates. A. M. Burgess.—p. 598.
Medical Audit. H. S. Joyce.—p. 621.

Southern Medical Journal, Birmingham, Ala.

39:597-680 (Aug.) 1946. Partial Index

*Penicillin in Treatment of Acute Osteomyelitis, with Case Reports. J. F. Hamilton and H. B. Boyd.—p. 597.
Yaws. Treatment with Penicillin. W. D. Stubenbord.—p. 608.
*Coccidioidomycosis Treated with Penicillin: Case Report. W. T. Arnold and M. D. Levy.—p. 609.
Coccidioidomycosis. J. W. Burks Jr. and P. E. Thompson.—p. 613.
Spontaneous Pneumoperitoneum Without Peritonitis and Without Demonstrable Cause. J. M. Mason, E. M. Mason and K. F. Kesmodel.—p. 620.
Intermuscular Lipoma of Thigh with Roentgenologic Findings. H. E. Simon and H. R. Senturia.—p. 624.
Still's Disease (Atrophic Arthritis, Atrophic Rheumatoid Arthritis or Infectious Rheumatoid Arthritis). W. F. Burdick.—p. 626.
Comparison of Quinine and Quinacrine in Treatment of Clinical Attacks of Vivax Malaria. H. H. Gordon, H. B. Christianson and S. W. Lippincott.—p. 631.
*Activity of Another L. Casei Factor in Microcytic Anemia. T. D. Spies.—p. 634.
Respiratory Emergencies in Infants and Children. J. A. Toomey. —p. 635.
Intravenous Anesthesia in Anorectal Surgery. M. C. Pruitt.—p. 640.
Review of Spinal "Pentothal" Anesthesia. S. S. Clark.—p. 643.
Penicillin in Acute Pelvic Inflammatory Diseases (Nonvenereal). W. N. Jones.—p. 646.
Effect of Caffeine on Gastric Secretion. V. H. Musick, H. C. Hopps, H. T. Avey and A. A. Hellbaum.—p. 651.

Penicillin in Acute Osteomyelitis.—Hamilton and Boyd have used penicillin in the treatment of acute and chronic osteomyelitis for the past eighteen months. Histories of 11 cases are reported. The earlier the penicillin therapy is instituted, the quicker will be the response and the better the end result. There may be an occasional infection with a penicillin resistant staphylococcus. In cases not responding to penicillin one of the sulfonamides is prescribed and vice versa. There may also be cases in which the two drugs may be used simultaneously to greater advantage. In a patient with a pocket of pus infected with a susceptible pathogen, even though the action of penicillin is not inhibited by organic matter as are the sulfonamides, it may not, for physical reasons, arrest the growth of staphylococci in the abscess. Such accumulations of pus should be drained, especially if response to penicillin is delayed. Penicillin should be given for at least five days after the temperature has returned to normal, and the total amount of penicillin for patients with acute osteomyelitis should be at least 1 million units. The economic factor in reducing the length of hospitalization as the result of penicillin therapy is astounding when compared with former methods.

Penicillin in Coccidioidomycosis.—Arnold and Levy report a case in which the course was typical of acute coccidioidomycosis followed by the disseminated or granulomatous stage. A Negro aged 32, who was a waiter on a train that traveled from Texas to California through Arizona, complained of coughing, cold, low grade fever, chills, night sweats, pain in the left shoulder, substernal pains and hemoptysis. The first x-ray diagnosis was tumor of the left hilus, probably a bronchogenic carcinoma; but on bronchoscopy no tumor was found. Later a diagnosis of tuberculosis of the glandular type was made and then a questionable diagnosis of Hodgkin's disease, for which x-ray therapy was given. During a final hospitalization a chronic meningitis was diagnosed and large doses of penicillin were given intramuscularly and intraspinally, but the patient died.

Another Lactobacillus Casei Factor.—A new Lactobacillus casei factor has been described by Hutchings and his associates. The compound was obtained from a fermentation residue and was almost as active as the liver L. casei factor when assayed with L. casei, but only 6 per cent as active when assayed with Streptococcus fecalis R. When a small quantity of the natural fermentation L. casei factor became available, Spies tested it on a man aged 65 with pernicious anemia in relapse. He had responded twice to reticulogen but relapsed when he did not wish to continue the injections. This time on his fourth hospital day, a 3 mg. injection of natural fermentation L. casei factor was given intramuscularly and was repeated daily for eleven days. On the fifth day the reticulocytes had risen from 1 per cent to 2.6 per cent and on the tenth day reached a peak of 5.4 per cent. After that they subsided slowly, but by the sixteenth day the red blood cells had risen from 1.89 to 2.4 millions and the hemoglobin had likewise increased. There was also great subjective improvement. The ingestion of the material did not cause any untoward symptoms.

Surgery, St. Louis

20:163-314 (Aug.) 1946

President's Address: The Surgeon—An Individualist. R. R. Graham. —p. 163.
Massive Organizing Hemothorax: Operative Treatment, Its Technic, Indications and Pitfalls. A. F. Jonas.—p. 168.
Further Experiences in Surgical Treatment of Congenital Atresia of Esophagus with Tracheoesophageal Fistula. C. R. Lam.—p. 174.
Postoperative Pulmonary Embolism: Review of Cases from 1939 to 1944. J. J. Smyth and M. G. Gillespie.—p. 180.
Management of Pulmonary Abscess. F. M. Woods and E. J. McGrath. —p. 187.
*Acute Secondary Parotitis. W. A. Altemeier.—p. 191.
Curare—Its Rational Use as Adjunct to Anesthesia. S. C. Cullen. —p. 200.
Role of Cancellous Bone in Plastic Surgery. S. Gordon.—p. 202.
Method in Management of Multiple Facial Fractures. H. H. Campbell. —p. 204.
Tardy Median Palsy: Median Neuritis; Median Thenar Neuritis Amenable to Surgery. B. W. Cannon and J. G. Love.—p. 210.
Fundamentals of Technic in Transverse Abdominal Incision. F. N. Gurd.—p. 217.
*Resection of Duodenum and Head of Pancreas for Carcinoma. J. M. Waugh and O. T. Clagette.—p. 224.
Value of Exclusion Operation in Treatment of Intestinal Fistulas. J. G. Probstein.—p. 233.
Reconstruction of War Wounds of Colon and Rectum. J. E. Hamilton and L. M. Cattanach.—p. 237.
Transverse Colostomy. L. S. Fallis.—p. 249.
Radical Perineal Prostatectomy for Carcinoma of Prostate. J. K. Ormond.—p. 257.
Prostatic Carcinoma: Follow-Up on 795 Patients Treated Prior to Endocrine Era and Comparison of Survival Rates Between These and Patients Treated by Endocrine Therapy. R. M. Nesbit and T. Plumb. —p. 264.
Novocain Infiltration in Treatment of Acute Ankle Injuries Without Fracture. C. W. McLaughlin Jr.—p. 280.
*Metabolic Alterations Following Thermal Burns: VI. Effect of Altering Nitrogen and Caloric Intake or of Administering Testosterone Propionate on Nitrogen Balance. W. E. Abbott, J. W. Hirshfeld, H. H. Williams, M. A. Pilling and Frieda L. Meyer.—p. 284.

Acute Secondary Parotitis.—During the past nine years Altemeier has seen 49 patients with acute secondary parotitis. The ages of these patients varied between 7 and 84. The infection involved the right side in 25 instances, the left in 19 and both in 4. All but two of the infections occurred in patients debilitated by some primary disease or injury. One of the causal factors was poor oral hygiene. Dehydration, mouth breathing, suppression of salivary secretion and the existence of dental caries favored the development of an ascending infection along Stensen's duct. A sharp elevation of body temperature, pulse rate and white blood cell count usually occurred. Treatment consisted in the administration of 120 to 250 minims of Lugol's solution per day at the earliest opportunity until improvement occurred. Thereafter the daily dose was progressively reduced. The greater part was given by mouth whenever possible, and supplemental amounts were given by hypodermoclysis, intravenous infusion or proctoclysis. Treatment for the primary disease was continued, and supportive therapy included the use of hot compresses. Early and adequate treatment with massive doses of Lugol's solution was found to give satisfactory results. Penicillin therapy in a small number of instances showed much promise. One patient who failed to respond to Lugol's solution responded to penicillin. Resolution occurred in all but 1 of the early cases with either form of treatment, and abscess formation was more likely to develop in older cases of three or more days' duration before the start of therapy. Draining of abscesses is advised in conjunction with chemotherapy. Although 15 of the 49 patients died, in 13 of the 15 the parotitis had completely or partially resolved under chemotherapy without abscess formation before death occurred. The chief causes of death were the underlying primary diseases.

Resection of Duodenum and Head of Pancreas for Carcinoma.—Waugh and his co-workers point out that, largely because of the pioneering efforts of Whipple, a radical operation has been evolved for carcinoma in the region of the ampulla of Vater. This operation offers the patient a chance for cure not previously available. It consists in radical resection of the duodenum and head of the pancreas. The authors review 30 cases in which this operation was performed at the Mayo Clinic. The operative mortality in these cases was 20 per cent. The postoperative survival on short follow-up is disappointing in the cases in which the operation was done for carcinoma of the head of the pancreas but encouraging in those in which it was done for carcinoma of the ampulla of Vater. Although the one stage procedure is usually preferable, there is the occasional patient with severe damage to the liver who will require a two stage operation. Pancreaticojejunostomy, either end to end or end to side, has improved the prospect for normal nutrition postoperatively. Choledochojejunostomy usually is preferable to cholecystojejunostomy in the one stage procedure. Postcolic, antiperistaltic gastrojejunostomy made distal to the biliary and pancreatic anastomoses lends itself well to this type of resection and has proved most effective.

Thermal Burns: Effect of Altering Nitrogen and Caloric Intake or of Administering Testosterone Propionate.—Abbott and his co-workers summarize the impressions gained in studying the metabolic response of 45 burned patients and a group of animals with standardized experimental burns. This report is largely confined to the the effect on the nitrogen balance of altering the food intake or of administering daily 25 mg. of a nitrogen-retaining hormone (testosterone propionate). Following a thermal injury there is a fairly characteristic metabolic response, which is dependent on the severity of the injury and on the patient, his sex, age, previous nutritional state, therapy and complications. Diets with 3,000 to 5,000 calories and containing 100 to 300 Gm. of protein do not seem advantageous during the catabolic phase following a burn. In fact, such therapy seems to be harmful when given during the first week or two. Diets containing 1.6 times the basal caloric requirement (100 to 150 Gm. of protein) seemed to be tolerated quite well by the average patient. These patients had a smoother clinical course than did those on a higher intake; they maintained weight better and showed a smaller nitrogen loss than did the patients treated on a lower food intake. There is evidence that testosterone propionate may be of value in thermal injuries, although further investigation is necessary before such therapy can be advocated for routine use.

Texas State Journal of Medicine, Fort Worth

42:251-300 (Aug.) 1946

Cholesterol Levels in Various Diseases and Effects of Decholesterizing Agents. G. R. Herrmann.—p. 260.
Infectious Hepatitis. S. C. Arnett Jr.—p. 264.
War Wounds of Liver. G. F. Madding, K. B. Lawrence and P. A. Kennedy.—p. 267.
Treatment of Compound Fractures of Long Bones. H. Dudgeon Jr. —p. 273.
Use of Thromboplastin Fixation in Skin Grafting and Wound Healing. M. D. Heatly.—p. 275.
Outlook for Infants Receiving Anti-Rh Agglutinins from Isoimmunization of Mothers. A. Bloxsem.—p. 279.
Use of Fine Cotton Sutures in Episiotomy Repairs. W. S. Morse. —p. 282.
Simple Technic for Closure of Cataract Incision. R. K. Daily and L. Daily Jr.—p. 284.
Ulcerative Colitis with Perforation in Newborn: Case. J. A. Hart. p. 286.

United States Naval Med. Bulletin, Washington, D. C.

46:1159-1348 (Aug.) 1946. Partial Index

Rapid Method for Determining Methyl Alcohol in Blood and Body Fluids. E. E. Ozburn.—p. 1170.
Injection of Iodized Oil as Aid to Closure of Draining Sinuses. G. Crile Jr.—p. 1174.
*Tropical Acne. M. B. Sulzberger, E. F. Addenbrooke, S. J. Joyce, S. Greenberg and A. G. Mack.—p. 1178.
Bronchiectasis: Clinical Analysis of 39 Cases. J. J. Witt.—p. 1192.
Giardiasis: Question of Pathogenicity. H. A. Monat and W. L. McKinney Jr.—p. 1204.
Specific Gravity of Healthy Men: Report of 835 Cases. S. S. Sarkisian. —p. 1207.
Neuralgic Reflex from Impacted Lower Third Molar. S. J. Welborn. —p. 1212.
Pneumococcal Vulvitis and Vaginitis: Case. R. C. Forman.—p. 1214.
Prosthetic Restoration Following Gunshot Injury of Maxilla. H. E. Denen.—p. 1218.
Suggested Modification of Bogen Procedure for Determination of Alcohol in Body Fluids. J. J. Engelfried.—p. 1222.
External Otitis in Tropics. P. Ashley.—p. 1230.
Efficacy of Penicillin Ointments. J. A. Heinlein, C. C. Carpenter, A. Yaguda and Jean C. Wyse.—p. 1237.
Intradermal Tests with "Dirofilaria Immitis" Antigen as Diagnostic Aid in Human Filariasis. G. M. Saunders, A. A. Bianco and W. S. Jordan.—p. 1242.

Tropical Acne.—According to Sulzberger as high as 10 per cent of all patients in military hospitals on Guam had skin diseases and from 60 to 70 per cent of ambulatory patients had skin disorders. Analysis of dermatologic cases revealed that approximately 20 per cent of the dermatoses are acnes. This is the more astonishing in view of the observation that most cases of acne seen in temperate climates tend to improve during the summer and in warm weather. The authors present observations on 51 consecutive cases of acne studied on the island of Guam. Although furuncles and furunculoid lesions may be present, the characteristic lesions of acne dominate the picture. There are blackheads, papules, nodules, pustules, cysts and often scarring. Despite the basic similarity with acne vulgaris the condition differs from adolescent acne vulgaris in several significant respects, namely its age of onset, its principal localization and its course. It is brought on or made worse by heat and high humidity and tends to improve when patients are removed to a cool dry environment. While poor personal hygiene, diet, local factors and infection may play some role, the occlusion of the ducts of hyperactive sebaceous glands seems to be the essential pathologic process.

Virginia Medical Monthly, Richmond

73:301-346 (July) 1946

Compulsory Federal Sickness Insurance. W. B. Martin.—p. 303.
Diagnosis of Respiratory Allergy. M. Millman.—p. 309.
Spinal Anesthesia. C. H. Lupton Sr. and C. H. Lupton Jr.—p. 315.
Management of Adenomatous Goiters. R. M. DeHart.—p. 320.
Skin Test as Suggested Aid in Diagnosis of Salmonella Suipestifer: Case Report. J. S. Morris and M. G. Irons.—p. 324.
Primary Virus Mastitis from Mumps. C. Marshall Lee.—p. 327.
Spontaneous Passage of Open Safety Pin from Esophagus into Stomach with Point of Pin Directed Downward: Report of Case. P. P. Vinson.—p. 329.
Tension Pneumothorax from Rupture of Esophagus: Report of Case. W. E. Pembleton.—p. 331.

73:347-392 (Aug.) 1946

Disfigurements of Face. W. L. Gatewood.—p. 351.
Precautions in Administration of Sulfa Drugs. H. H. Howze.—p. 356.
Importance of Cerebrospinal Fluid Examination in Syphilis. L. W. McIlhany.—p. 360.
Pulmonary Actinomycosis Due to Actinomyces Asteroides. F. W. Shaw. —p. 362.
Use of Defibrinated Human Blood for Culturing Tubercle Bacillus. A. W. Bengston.—p. 369.
Surgical Lesions of Greater Omentum. E. M. Fusco.—p. 371.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

54:307-340 (Aug.) 1946

Obstruction Following Gastrojejunostomy: Its Biochemical Factors. J. H. Woolsey.—p. 307.
Delayed Healing of Abdominal Wound Due to Food Allergy. A. H. Rowe.—p. 313.
Thyrotoxicosis and Pregnancy. R. C. Stepto.—p. 317.
Pyogenic Infection of Spinal Epidural Space. R. M. Rankin and P. G. Flothow.—p. 320.
Prophylactic Treatment of Congenital Syphilis. H. Vignes.—p. 324.
Symposium on Use and Abuse of Bed Rest in Surgery, Urology, Orthopedics and Medicine. D. Mason, E. B. Speir, R. G. Wyrens, I. McLemore and J. J. Reilly.—p. 328.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Rheumatic Diseases, London

5:69-104 (March) 1946

Nature of Fibrositis: II. Study of Causation of Myalgic Lesion (Rheumatic, Traumatic, Infective). M. Kelly.—p. 69.
*Weltmann Coagulation Reaction in Rheumatoid Arthritis. O. Lucchesi, M. Lucchesi and S. Bailonie.—p. 78.
Formol-Gel Test on Plasma and Serum in Rheumatic Cases: Correlation Studies and Suggestion that Non-Rouleau Forming Pathologic Globulins May Be of Significance in Rheumatism. H. J. Gibson and R. M. Pitt.—p. 83.
*Necrobiotic Nodules of Rheumatoid Arthritis Type with Lipoid Deposition. E. Fletcher.—p. 88.
Fibrositis and B-Diethylaminoethyl Dehydrocholate. H. Coke.—p. 96.
Cold Reaction Test for Peripheral Vasomotor Disturbances in Rheumatism. A. Woodmansey.—p. 99.
Ankylosing Spondylitis. W. Tegner.—p. 103.

Weltmann Coagulation Reaction in Rheumatoid Arthritis.—The Lucchesis and Bailonie think that Weltmann's serum flocculation band has not been sufficiently investigated in rheumatic diseases. They made this test 200 times in 85 cases, 66 of which (180 reactions) were cases of rheumatoid arthritis. They found that the sensitivity of the Weltmann reaction was practically the same as that of the sedimentation rate, the Weltmann reaction being only 2.8 per cent below the sedimentation rate. During the active stage of rheumatoid arthritis the Weltmann reaction showed a narrowed flocculation band; during the resting periods the band was normal. In rheumatoid arthritis the narrowing of the flocculation band was not as noticeable as in rheumatic fever. It occurred only up to tube 4. In rheumatoid arthritis the prognosis was favorable in cases which showed a normal or enlarged band, and it was unfavorable in cases showing a narrowed band. A favorable or reserved prognosis may in certain cases be advanced several months earlier, on the basis of the Weltmann reaction, than when the sedimentation rate is taken as a guide. In the terminal stage of rheumatoid arthritis there is a tendency toward an enlargement of the flocculation band.

Nodules of Rheumatoid Arthritis.—Fletcher reports a case in which nodules made their appearance on the head, neck, chest, abdomen, upper part of the arms, forearms, wrists, hands and legs of a man aged 42 four and a half years after he contracted rheumatoid arthritis. Biopsies were made of four subcutaneous nodules. There was present in all four specimens an area of complete necrosis in the center of the nodules, which, in three of the specimens, was surrounded by a cellular band containing numerous foam cells and many multinucleated and foreign body giant cells. Surrounding this again was a partly degenerated connective tissue band which contained, in addition to well defined foam cells, numerous inflammatory cells. In the other nodule the cellular zone was composed of fibroblasts arranged in a palisade manner. The vessels in the nodules and in the neighborhood showed endoarthritis, mesoarthritis and periarteritis. Cholesterol was present in the necrotic areas and the surrounding tissues. Fletcher suggests that probably the best description of the apparently unique nodules would be "necrobiotic nodules of the rheumatoid arthritis type with lipoid deposition."

Archives of Disease in Childhood, London

21:61-120 (June) 1946

Pulmonary Agenesis and Hypoplasia. C. Elaine Field.—p. 61.
Fatal Case of Beriberi in Child in England. E. C. Allibone and H. S. Baar.—p. 76.
Penicillin and Sulfonamides in Treatment of Infections in Infancy. E. C. Ross.—p. 88.
Psychologic Aspect of Allergic Skin Reactions in Childhood. Barbara Woodhead.—p. 98.
Statistics of Prematurity: Plea for Standardization. J. L. Henderson.—p. 105.
Incidence of Congenital Pyloric Stenosis. G. Davison.—p. 113.
Dental Fluorosis. H. Sainsbury.—p. 115.
Pyecolpos in Infancy. I. P. Todd.—p. 118.

British Journal of Dermatology and Syphilis, London

58:147-212 (July-Aug.) 1946

Prospect and Retrospect: II. H. MacCormac.—p. 147.
Recurrent Aphthous Ulceration of Oral Mucous Membrane and Genitals Associated with Recurrent Hypopyon Iritis (Bechet's Syndrome): Report of 3 Cases. I. Katzenellenbogen.—p. 161.
*Myxedema Circumscriptum Thyrotoxicum. E. Lipman Cohen.—p. 173.
Dermatology in B. L. A. F. F. Hellier.—p. 183.

Circumscribed Thyrotoxic Myxedema.—Lipman Cohen reports a case of circumscribed myxedema in a man aged 35 with mild thyrotoxicosis manifested by exophthalmos, nervousness, tremor, sweating, palpitation and relative lymphocytosis. On the anterior aspect of both legs there were roughly rectangular, poorly demarcated, raised bluish thickenings with yellow discoloration surrounding the lesions. These thickenings contained poorly defined firm swellings. The follicles were prominent and there were large flat, irregular, shiny translucent papules. When a biopsy was performed, mucin oozed from the incision. Thiouracil 1.2 Gm. was given daily for three weeks; administration of this drug was continued with 0.6 Gm. daily for two weeks and with 0.4 Gm. daily for nine weeks. The patient gained 14 pounds (6.4 Kg.) and his nervousness and tremor disappeared. The exophthalmos had greatly decreased. Changes in the skin were slight. The blue and yellow coloration had disappeared and the swellings were considerably softer but slightly bigger. Thiouracil will not cure this condition even when it controls the thyrotoxicosis completely. The name "myxedema circumscriptum thyrotoxicum" is suggested for the condition as being accurately descriptive and not too unwieldy.

British Journal of Experimental Pathology, London

27:135-210 (June) 1946. **Partial Index**

Investigation Into Production of Bacteriostatic Substances by Fungi: Preliminary Examination of Fifth Hundred Species, All Basidiomycetes, Mostly of Wood Destroying Type. W. H. Wilkins.—p. 140.
*Renal Effects of Protein Deficient Vegetable Diets: Functional and Histologic Study. S. E. Dicker, H. Heller and T. F. Hewer.—p. 158.
Observations on Acidophil Cell Changes in Pituitary in Thyroxine Deficiency States: I. Acidophil Degranulation in Relation to Goitrogenic Agents and Extrathyroidal Thyroxine Synthesis. H. D. Purves and W. E. Griesbach.—p. 170.
Influence of Methylation on Carcinogenic Activity: I. N-Methyl-3:4:5:6-Dibenzcarbazole. A. H. M. Kirby and P. R. Peacock.—p. 179.
*Fecal Urobilinogen: Clinical Evaluation of Simplified Method of Estimation. N. F. Maclagan.—p. 190.
Some Observations on Blood Clotting Mechanism: Role of Fibrinogen and Platelets, with Reference to Case of Congenital Afibrinogenemia. J. L. Pinniger and F. T. G. Prunty.—p. 200.

Effect of Protein Deficient Diets on Rat Kidney.—Dicker and his associates investigated the kidney function of rats fed on vegetable diets that were deficient in protein. Kidney function tests were performed when the rats had been on protein deficient vegetable diets for about thirty-six days and when their plasma protein concentration had decreased from 7.58 ± 0.682 to 4.26 ± 0.097 Gm. per hundred cubic centimeters. Estimations of the total tubular excretory mass of rats on a protein deficient "turnip diet" gave figures which were significantly lower than those in normal rats, showing an impairment of the tubular diodone transfer mechanism. Urinary concentration and dilution tests revealed that the urine of rats on a standard diet reached a mean specific gravity of 1.070 ± 0.0037 after twenty-four hours of water deprivation. The same series of animals at the end of the period of protein deficient feeding excreted a urine of the mean specific gravity of 1.041 ± 0.0044. The results of the concentration and dilution tests are discussed with reference to the occurrence of visible edema in the animals on protein deficient vegetable diets and to the decreased water diuresis usually observed in hypoproteinemic rats. Renal lesions were found in many of the rats on protein deficient vegetable diets. They consisted of necrosis and calcification of the broad limbs of Henle; the glomeruli and other parts of the nephron showed no apparent change.

Estimation of Fecal Urobilinogen.—Maclagan treats fresh stool with ferrous hydroxide to convert stercobilin pigments to urobilinogen. The filtrate is heated with Ehrlich's reagent and sodium acetate, and the pink color is compared in either a photoelectric colorimeter or in a Duboscq type colorimeter against a neutral gray screen. Estimations in 120 cases are recorded. A study of the various possible sources of error indicates the importance of testing only fresh specimens. Normal values were from 30 to 220 mg. per hundred grams or from 22 to 121 mg. per day if estimated on four consecutive twenty-four hourly collections. Results were above normal in retention jaundice, malaria, untreated pernicious anemia and aplastic anemia, after fractures of long bones and in certain cases of infective jaundice; they were below normal in many cases of infective and obstructive jaundice. The value of the test as an index of hemolysis is discussed. When used for this purpose it may be desirable to combine the estimation with reticulocyte counts and/or serum bilirubin estimations.

British Medical Journal, London

2:185-216 (Aug. 10) 1946

*Male Infertility. T. N. A. Jeffcoate.—p. 185.

Treatment of Carcinoma of Prostate by Perurethral Resection and Stilbestrol. H. T. Cox.—p. 191.

Outbreak of Smallpox in Middlesex. W. H. Bradley, J. O. F. Davies and J. A. Durante.—p. 194.

Case of Mercurial Poisoning and Its Treatment. R. H. Ellis.—p. 197.

Syndrome Known as "Reiter's Disease": Triad of Polyarthritis, Urethritis and Conjunctivitis. W. P. U. Jackson.—p. 197.

Male Infertility.—Of the 512 consecutive cases of sterility seen by Jeffcoate in private practice 491 were investigated, and assessment of the husband's fertility was made in 320 of these. In the hospital series the husband's fertility was assessed in 115 of the 252 cases studied. Not less than one third of the husbands of infertile marriages have impaired fertility. Of the husbands examined by semen analysis 40 per cent showed evidence of subfertility. Responsibility for one pregnancy is unreliable evidence of a man's fertility. Impotence existed in 13, phimosis preventing coitus in 1 and faults in semen in 169. Impotence is more often due to psychologic disturbance than to physical disability or endocrine upset. The treatment of impotence consisted essentially in talks and discussions with the object of sorting out the underlying cause of the inhibition, explaining it and giving instruction on sex matters. This treatment proved effective in some of the cases. Sublingual administration of testosterone was largely ineffective. The causes of defects in production or delivery of spermatozoa are mumps, cryptorchism, venereal disease, varicocele and endocrine imbalance. In about half of the cases none of these causes could be found, and in these many possible etiologic factors have been postulated such as nutritional deficiencies and constitutional, occupational and environmental factors. In the absence of an obvious cause the treatment of faulty production of spermatozoa is for the most part empirical. Attention to general health and habits, hours of work and recreation is always important. Some form of glandular therapy is usually advised. Semen analysis before and after treatment with serum gonadotropin in 14 cases showed that in the majority of cases the quality of the semen improves after treatment and that it deteriorates again when treatment is suspended. These results, although suggestive, are not conclusive, and the possibility of spontaneous variations in the semen cannot be excluded. In the assessment of male infertility arbitrary standards for the various characters of the semen have to be adopted. Attention is drawn to the need for caution in the interpretation of the results.

2:217-252 (Aug. 17) 1946

*Health of Children in Wartime Day Nurseries. Report of Investigation by the Day Nurseries Committee of the Medical Women's Federation, in Conjunction with W. J. Martin.—p. 217.

Aftermath of Perforated Peptic Ulcer. W. Houston.—p. 221.

Meningitis Due to Penicillin Sensitive, Sulfonamide Insensitive Pittman b Strain of Hemophilus Influenzae: Recovery. Constance F. Drysdale, D. G. McIntosh and J. Brodie.—p. 223.

Acute Enteritis in Subtropical Climates. I. MacGregor.—p. 225.

Overdosage with Bromides: Report of 59 Cases. E. C. Dax.—p. 226.

Health of Children in Wartime Day Nurseries.—The Nurseries Committee of the Medical Women's Federation compared children who had been six months or more on the register of a wartime day nursery (nursery group I) with two other groups: (*a*) children who had been less than one week in a day nursery (nursery group II) and (*b*) children attending welfare centers. Wartime day nurseries were established with the object of augmenting the country's labor force. Admission was therefore limited in the main to the children of mothers in employment. Children who had been on the register of a wartime day nursery for six months or more had a much higher incidence of respiratory infection than those attending welfare centers in the same localities. The difference was present in all age groups and in both sexes. The 2 to 3 year old groups showed the greatest difference. The increase in respiratory infection was not attributable to significant differences between welfare center and nursery children at the start of their nursery life. On the other hand, the data show that the nursery children were on the whole heavier than the welfare center ones. More nursery children were recorded as "very fit" and "well" in the upper age groups than in the same age groups of welfare center children. The scope of the evidence is admittedly limited, but as far as it goes it does not indicate a beneficial effect of nursery life for the younger children—rather the reverse. The conclusion is reached that the high incidence of respiratory infection in wartime day nurseries constitutes a risk to health demanding careful consideration in weighing the value of day nursery life.

2:253-286 (Aug. 24) 1946

Study of Peptic Ulcer. H. Gainsborough and E. Slater.—p. 253.

Breast Milk Bank in Maternity Units. Martha Dynski-Klein.—p. 258.

*Painful Feet Syndrome Among Prisoners of War in Far East. J. A. Page.—p. 260.

Facial Palsy Accompanying Acute Mastoiditis, with Comments on Chemotherapy in Acute Suppurative Otitis Media. K. R. Ogilvie.—p. 263.

Treatment of Pediculosis Capitis with DDT Emulsion. A. D. Frazer. —p. 263.

Painful Feet Syndrome.—Page directs attention to a condition known as painful, electric, hot or happy feet among prisoners of war in the Far East. It is ushered in by severe burning and aching of the feet associated with hyperesthesia, raised skin temperature and vasomotor changes in the feet, with general body wasting. The condition was first seen from three to five months after the Japanese occupation in the various countries in the Far East where large prison camps were established. No definite cause could be attributed at first, but protein, fat or vitamin deficiencies were considered as possible causes. A factor contained in grain was regarded as important when it was observed that men fed for months on rice with a rich admixture of barley did not develop painful feet, whereas their comrades fed on a poor grade of frequently musty rice did. The syndrome appears to be the result of a deficiency of factors in the vitamin B complex closely allied to the PP factor but primarily affecting the peripheral arteries of the lower extremities, or it might possibly be due to a toxic factor in old musty polished rice associated with a low protein intake and reduced vitality. The appearances in the early stages are similar to those of erythromelalgia. It is not an angioneurosis and is not associated with a neuropathic diathesis. The disease is amenable to treatment by replacement of the deficient elements in the diet; otherwise it is rapidly progressive, ending in death or serious crippling deformities.

Edinburgh Medical Journal

53:337-400 (July) 1946

Valedictory Address on "Can International Disputes be Settled Without War—and Will They?" W. J. Stuart.—p. 337.

Ligation of Ductus Arteriosus. A. R. Gilchrist.—p. 346.

Patent Ductus Arteriosus and Its Surgical Treatment. W. Mercer. —p. 355.

Tuberculosis Under a National Health Service: I. General Review. J. S. Westwater.—p. 360.

Id.: II. With Special Reference to Rural Areas. C. Clayson.—p. 371.

Value of Vitamin A Estimation in Blood. W. Tomaszewski and L. Dzialoszynski.—p. 379.

Effect of Arteriovenous Aneurysms on Blood Volume and Blood Picture. M. H. Roscoe and G. M. M. Donaldson.—p. 391.

Journal of Laryngology and Otology, London

60:461-520 (Dec.) 1945

Congenital Choanal Atresia. A. Durward, O. C. Lord and C. J. Polson. —p. 461.

Repair of Depressed Nasal Bridge. S. Suggit.—p. 501.

Wounds of Mastoid Process: (Report of 11 Cases). J. Magill.—p. 504.

Journal of Mental Science, London

92:497-666 (July) 1946

Clinical Survey and Results of 200 Cases of Prefrontal Leukotomy. J. Frank.—p. 497.
Experiment in Vocational Adjustments of Neurotic Patients. H. Halstead and P. Slater.—p. 509.
Generalized Xanthoma, with Case Presenting Lesion of Central Nervous System. C. E. H. Turner.—p. 516.
Social Maturity Test. F. Brodman.—p. 532.
Lasting Lessons of Overseas Military Psychiatry. S. A. MacKeith. —p. 542.
Mental Disorder in Adult Defective. J. C. Rohan.—p. 551.
Quaker Contribution to Psychiatric Thought and Practice. Gwendoline D. Knight.—p. 564.
Intracranial Aneurysm with Minimal Signs. A. Roberts.—p. 570.
*Study of Psychiatric Illness in Coal Miners. F. Post and M. B. Lond. —p. 574.
Psychiatric Casualties in Burma. E. Stungo.—p. 585.
Pain and its Underlying Pathology. G. F. Rowbotham.—p. 595.

Psychiatric Illness in Coal Miners.—Post and Lond report observations on 100 men employed in underground work in the mining industry who were treated at the Jordanburn Nerve Hospital. Anxious depressive psychoneurosis was observed in 30 patients, depressive psychosis in 18, persistent psychoneurosis including psychopathies in 14, organic psychiatric syndrome in 12, schizophrenic psychosis in 11, conversion hysteria in 10 and physical disease accompanied by psychiatric symptoms in 5. In more than half of the miners suffering from a psychiatric illness occupational factors were absent or unimportant from the point of view of etiology, and only few men broke down on account of the unpleasant and dangerous nature of underground work alone; on closer investigation deeply seated personality problems eclipsed in importance the occupational factor. The author thinks that observations made on psychologically ill men cannot be applied to miners as a group. There are the stabilizing factors of a corporative spirit and, especially in the face of danger, miners show a fine sense of comradeship. Yet there is also an atmosphere of disgruntled resentment and restiveness, which must provide a favorable culture medium for neurotic reactions.

Journal of Physiology, Cambridge

104:353-448 (April) 1946. Partial Index

Renal Action of Posterior Pituitary Extract and Its Fraction as Analyzed by Clearance Experiments on Rats. S. E. Dicker and H. Heller. —p. 353.
Temperature and Blood Flow in Human Forearm. H. Barcroft and O. G. Edholm.—p. 366.
Normal Visual (Rod) Field of Dark Adapted Eye. Ida Mann and F. W. Sharpley.—p. 384.
Stimulating Action of Acetylcholine on Heart. R. J. S. McDowall. —p. 392.
Normal Variations in Blood Hemoglobin Concentration. A. Brown and A. L. Goodall.—p. 404.
Properties and Distribution of Enzyme System Which Synthesizes Acetylcholine in Nervous Tissue. W. Feldbert and T. Mann.—p. 411.
Circulatory Changes During Fainting and Coma Caused by Oxygen Lack. D. P. Anderson, W. J. Allen, H. Barcroft, O. G. Edholm and G. W. Manning.—p. 426.
Effect of Ethyl Alcohol and Some Other Diuretics on Chloride Excretion in Man. M. Grace Eggleton and Isabel G. Smith.—p. 435.
Osmotic Pressure of Human Fetal and Maternal Serums. E. F. McCarthy.—p. 443.

Lancet, London

2:221-256 (Aug. 17) 1946

Penicillin Inhalation in Pulmonary Disease. J. H. Humphrey and H. Joules.—p. 221.
Inhaled Penicillin in Bronchial Infections. N. Southwell.—p. 225.
*Casein Hydrolysate: Supplementary Food for Premature Infants. J. E. Jorpes, J. H. Magnuson and A. Wretlind.—p. 228.
Acute Abdominal Lymphadenitis in Children. Alfreda H. Baker and Ursula James.—p. 232.
Artificial Pneumoperitoneum: As Emergency Measure in Severe Hemoptysis. A. J. Benatt.—p. 234.
Poisoning by DDT Emulsion: Report of Fatal Case. K. Biden-Steele, and R. E. Stuckey.—p. 235.
Tropical Eosinophilia in Egypt: Report of Case. E. Stephan.—p. 236.
Renal Pathology in Light of Recent Neurovascular Studies. J. Trueta, A. E. Barclay, P. Daniel, K. J. Franklin and M. M. L. Prichard. —p. 237.

Casein Hydrolysate for Premature Infants.—Jorpes and his associates gave a mixture of amino acids, an enzymic casein hydrolysate, as a supplement to breast milk to over 100 premature infants. Usually the daily dose was 2.5 Gm. of amino acids per kilogram of body weight, together with an equal amount of dextrose. The infants tolerated the amino acid mixture well. There were no signs of digestive disturbance. The feeding of this mixture of amino acids produced in every instance a distinctly higher gain in weight than breast milk alone. A comparison between the effects of this amino acid mixture and of a mixture containing undigested casein, dextrose and salts in the same strengths and proportions proved that the gain in weight was consistently greater during the periods when the infants were receiving amino acids than when casein was being administered. By special tests, in which neither dextrose nor salt mixture was added to the diet, it was demonstrated that the gain in weight was due to the amino acids. The results achieved indicate that by administering this supplementary food it is possible to shorten the hospital stay of these infants.

2:257-292 (Aug. 24) 1946

Serious Psychiatric Disability Among British Officers in India. R. F. Tredgold, H. N. Heffernan, G. Kelly and P. R. W. Leigh.—p. 257.
Vitamin A and Skin Disease. Z. A. Leitner and T. Moore.—p. 262.
Stabilization of Penicillin Solutions with Phosphate. R. J. V. Pulvertaft and J. Yudkin.—p. 265.
*Syndrome Simulating Acute Abdominal Disease. B. W. Goldstone and H. S. LeMarquand.—p. 267.
Sporotrichosis Resembling Diphtheria: Report of Unusual Case. H. S. Banks.—p. 270.
*Peptic Ulcer Treated with Gastric and Intestinal Extracts. O. Hubacher. —p. 272.

Syndrome Simulating Acute Abdominal Disease.—Goldstone and Le Marquand describe a series of cases in which the symptomatology indicated an acute abdominal condition. There was right upper abdominal pain and rigidity with pyrexia. The syndrome comes on in a few hours and frequently simulates a perforative lesion. Spontaneous recovery is the rule. In 1 of the 13 cases observed a perirenal abscess eventually developed. It is suggested that the cases in which spontaneous recovery occurred were abortive forms of perirenal staphylococcic infection. Abortive perirenal staphylococcic infection may be common in the silent perirenal fat, but symptoms do not arise unless the lesion touches the peritoneum. Cases simulating perforated peptic ulcer but negative on operation are not uncommon. They may be of the same type as those described here.

Gastric and Intestinal Extracts in Peptic Ulcer.—According to Hubacher enterogastrone, extracted from the intestinal mucosa, diminishes gastric secretion, decreases gastric motility and participates in the regulation of the blood supply to the gastric and duodenal mucosa. It largely prevents the development of the intestinal ulcers in dogs subjected to duodenoileac anastomosis and gastrojejunostomy. Urogastrone is a substance analogous to enterogastrone obtained from urine; it is found in decreased quantity in the urine of ulcer patients, and it has been assumed to represent an excretory form of enterogastrone. Independently of results obtained in the United States, extracts have been prepared in Switzerland from the stomach and small intestine of freshly slaughtered animals. The water soluble part of the extract is used for injection, and the water insoluble fraction is put up in tablets. The preparation for the treatment of gastric ulcer contains predominantly extract of stomach, whereas that for the treatment of duodenal ulcer contains principally extract of small intestine. Of 54 cases treated with these extracts 44 showed good results. All the cases which benefited by this treatment showed rapid disappearance of symptoms, increase in weight and rapid decrease in size of the ulcer niche as disclosed by radiography. These results were obtained without dietetic restriction or confinement to bed. It is suggested that the extract in tablet form can be used to supplement the injections or for prophylactic treatment.

Tubercle, London

27:81-104 (July) 1946

Basal Pulmonary Tuberculosis, with Special Reference to Etiology and Treatment. F. S. Hawkins and G. O. Thomas.—p. 82.
Changing Chest Clinic. P. Ellman.—p. 88.
Improved Stain for Fluorescence Microscopy. G. C. Huges.—p. 91.
Hematologic Study in Pulmonary Tuberculosis and Effect on It of Large Doses of Vitamin C. M. N. Rudra and S. K. Roy.—p. 93.
Artificial Anterior Pneumomediastinum in Treatment of Hemoptysis. J. M. Velasco.—p. 95.
National Scheme for Rehabilitation of the Tuberculous. F. R. G. Heaf, P. Edwards, J. B. McDougall and A. C. Tibbits.—p. 97.

Presse Médicale, Paris

54:373-384 (June 8) 1946

Tuberculin Cutireaction and Granulodiagnostic R Benda and D A Urquia —p 373
*Aninsulin P Barral —p 374
Aleukia Resulting From Ingestion of Toxic Food New Disease Described in URSS L C Brumpt —p 375

Aninsulin—Barral produced aninsulin by exposing insulin to the combined action of heat and formaldehyde Administration of aninsulin to rabbits, horses and human subjects revealed that aninsulin in concentration of 2 cc in 1 liter of isotonic solution of three chlorides to 10 cc per thousand is a vasoconstrictor, while insulin in a concentration of 2 cc per liter is a vasodilator and becomes a vasoconstrictor only with much higher concentration Aninsulin is not hypoglycemic and is not toxic It retains the trophic power of the insulin One injection of 0 2 to 0 5 cc of aninsulin every two days proved sufficient to stimulate cicatrization of indolent postoperative wounds and of ulcers of the leg Aninsulin increases the complement power of serum and has a pronounced antigenic power. A true Arthus phenomenon was produced in rats with Jensen's sarcoma by injection of aninsulin The existence of an antibody "antianinsulin" was demonstrated in the serum of certain patients with cancer

54:461-472 (July 13) 1946

*Severe Anemia Resistant to Hepatotherapy and Cured with Yeast J Olmer and H Sarles —p 461
Sternal Puncture and Toxic or Pathologic Granulations of Marrow Cells in Chronic Tuberculosis of Lungs L Bethoux —p 462
Enuresis and Urinary Rhythm R Lacassie —p 462

Severe Anemia Cured with Yeast.—Olmer and Sarles report 2 cases of severe anemia in 2 men aged 64 and 40 Both patients presented severe hypochromia, megaloblasts in the bone marrow but not in the blood, precocious or secondary absence of free hydrochloric acid in the gastric juice after histamine glossitis, and diarrhea Daily injections of 100 to 120 Gm of liver extract proved ineffective Rapid improvement and complete recovery resulted from the administration of 2 to 3 tablespoons of fresh yeast daily for two to three months The spectacular effect of the yeast therapy in these 2 cases opens new possibilities for this method of treatment in severe anemia

Semaine des Hôpitaux de Paris

22:1209 1272 (July 14) 1946 Partial Index

Present State of Clinical Electroencephalography A Baudouin —p 1209
*Electroencephalographic Diagnosis of Epilepsy A Baudouin, H Fischgold and A Remond —p 1217
Effect of Lobeline on Electroencephalogram of Epileptic Patients L Bugnard, J. Planques, F A Grezes Rueff and C Grezes Rueff —p 1225
*Electroencephalography of Brain Tumors H Baudouin, H Puech H Fischgold and A Lerique Koechlin —p 1226
Clinical and Medicolegal Utilization of Electroencephalography in Late Craniocerebral Trauma P Puech, H Fischgold, G Verdeaux and J Verdeaux —p 1233
Electroencephalography in Carbon Monoxide Poisoning J Ajuriaguerra and H Fischgold —p 1242
Electroencephalographic Study of Comatose States H Fischgold and G Bounes —p 1245
Analysis of Cerebral Frequencies L Bugnard —p 1247

Electroencephalographic Diagnosis of Epilepsy.—Baudouin and his associates state that specific paroxysmal patterns in the electroencephalogram, such as alternating wave spike complex, solitary spikes or sudden and transient spikes, are suggestive of epilepsy Paroxysmal irregularities consisting of a sudden emission of more or less symmetrical sinusoidal slow waves make epilepsy very likely in persons with attacks in the absence of other neuropsychic symptoms Definite deviations from the normal electroencephalogram may be present hours and days after a clinical paroxysm A favorable prognosis may be made on the simultaneous disappearance of these encephalographic changes and of the clinical symptoms as a result of adequate treatment while prognosis is uncertain in cases in which the encephalographic changes persist in the absence of clinical symptoms Normal electroencephalograms were observed in 20 per cent of persons with established diagnoses of epilepsy, particularly in persons of advanced age, in secondary epilepsy and in persons in whom the electroencephalograms were made a long time after the epileptic attack The diagnosis of epilepsy is uncertain in a young untreated person presenting a grand mal attack but whose electroencephalogram made a few hours after the attack is normal Only in persons over 20 years of age does the electroencephalogram assume its definite adult character Before this age many persons may still present the infantile type of the electroencephalographic record In the latter cases electroencephalograms should be interpreted with utmost caution with regard to the diagnosis of epilepsy

Electroencephalography of Brain Tumors—Baudouin and his associates studied electroencephalograms of 113 cases of brain tumor which were confirmed by ventriculography, surgical intervention or necropsy Sixty-four of these were tumors of the hemispheres The exact site of the tumor was demonstrated in 34 and the hemisphere involved was demonstrated in 9 A more or less definite localization has been possible in 67 per cent of the cases The encephalogram proved inadequate in 6 cases, diffuse generalized electrical changes prevented the localization of the tumor in 9, normal electroencephalograms were observed in 3, while in 3 cases the localization of the tumor was erroneous In the absence of clinical symptoms the electroencephalogram provides important information in cases in which the right temporal or the frontal lobes ("silent zones") are the site of the tumor Electroencephalography may replace cerebral ventriculography in a limited number of cases in which the electrical observations correspond to the clinical symptoms The electroencephalogram is of prognostic value with regard to immediate prognosis and the postoperative course In 21 cases of tumor of the base the value of the electroencephalogram was inferior to that of the roentgenologic and ophthalmologic examinations In 26 cases of tumor of the posterior fossa the electroencephalogram was of considerable prognostic value A totally altered electroencephalogram in which the alpha rhythm has disappeared suggests a grave disturbance in the brain and an unfavorable prognosis with regard to surgical intervention

Schweizerische medizinische Wochenschrift, Basel

76:477-502 (June 1) 1946

*Endocrinology of Tumors of Adrenal Cortex Clinical Identity of Cushing Syndrome in Pituitary Basophilism and in Tumor of Adrenal Cortex, Crooke s Cells, Diabetes Insipidus in Cushing's Syndrome, Comment on Pathogenesis H Buchler —p 477
Nitrose Gas Intoxications in Welders F Hatt —p 483
Mode of Action of Adrenal Cortex Extract in Histamine Shock T. Doby —p 485
Intoxication and Detoxication in Animals W L Lipschitz —p 486
*Chemically Detoxicating Action of Sulfonamides an Apparently Disregarded Characteristic Preliminary Report P Robert and V Stettler —p 488
Prophylaxis with Sulfonamides in Obstetrics H Aeppli —p 490

Endocrinology of Tumors of Adrenal Cortex—The observation of an endocrinologically active hypernephroma with Crooke's hyaline change in the pituitary basophils and with diabetes insipidus gave Buchler the opportunity to call attention to the clinical identity of Cushing's syndrome in hypophysial basophilism and in tumors of the adrenal cortex Differentiation between basophilic adenoma and interrenalism is impossible on the basis of the clinical characteristics, except that hypertrophy of the clitoris and severe hirsutism is more characteristic of hypernephroma The author describes the peculiar changes in the pituitary basophils described by Crooke in 1935 and stresses their significance as the only anatomic change in the endocrine apparatus that is found in all forms of Cushing s syndrome He points out that the demonstration of diabetes insipidus by Redlich and by himself represents an extension of the symptomatology of hypernephroma but the pathogenesis of the hypernephrogenic disturbance in the water exchange has not been explained as yet A hypophysial-diencephalic genesis is considered possible but in view of the simultaneously existing osteoporosis nephrocalcinosis and hyperplasia of the parathyroids the possibility of a parathyrogenic diabetes insipidus is taken into consideration

Detoxicating Action of Sulfonamides.—Robert and Stettler, observing that arsphenamine erythrodermia rapidly improves under sulfonamide treatment, suggested that in analogy to the sulfur therapy of toxicodermias the sulfur component of the sulfonamides may have a detoxicating effect. Since they were unable to find reports on this problem, they decided to investigate this assumed effect of sulfonamide compounds on the basis of the well known example of the detoxication of potassium cyanide by sulfur with formation of rhodan. It is well known that sodium thiosulfate, which readily splits off sulfur, is the best detoxicating agent in potassium cyanide poisoning. The authors made experiments on rabbits, administering the poison as well as a detoxicating sulfonamide preparation by intravenous injection. A decided protective action was exerted by the sulfonamide. It is believed that the detoxication takes place by way of rhodan formation. Sulfur probably plays an important part in the new chemotherapeutics and antibiotics.

Arch. Urug. de Med., Cir. y Especial., Montevideo

28:221-326 (March) 1946 Partial Index

**Treatment of Gastric and Duodenal Ulcers with Female Sex Hormones.* W. Friedlaender.—p. 231.
Cancer of Stomach: Clinical and Radiologic Considerations. M. A. Bellini.—p. 242.
Penicillin in Treatment of Syphilis. J. M. Tiscornia Denis.—p. 254.

Female Sex Hormones in Gastric and Duodenal Ulcers.—Friedlaender reports 5 cases of gastroduodenal ulcer in which he resorted to the use of female sex hormones. He gives his patients two weekly injections of 2.5 mg. of diethylstilbestrol or of 5 mg. of estrogenic substance for three weeks. After the sixth injection he gives one weekly injection for an additional period of four weeks. The pain is usually favorably influenced after the fifth or sixth injection. If there is no improvement after ten injections the treatment must be regarded as a failure. Some patients may have a slight swelling of the mammary glands and others may have temporary impotence, but both of these effects subside after treatment is stopped. The diet needs to be much less strict when estrogens are given than is the case in the classic Sippy treatment. It may include soups, purees, potatoes, vegetables, chicken, sweets, honey, compotes and the like. As a result of this more generous diet the patient's general condition is better, his weight increases and he has a better appetite.

Prensa Médica Argentina, Buenos Aires

33:1109-1166 (May 31) 1946 Partial Index

*Penicillin in Empyema Following Pulmonary Exeresis: Prophylactic and Curative Value in 203 Cases. L. Langer, E. Naclerio and F. E. Tricerri.—p. 1140.

Penicillin in Prevention and Therapy of Empyema Following Resection of Lung.—Two hundred and three patients with pulmonary disease (bronchiectasis, cancer, tuberculosis and chronic suppuration) were subjected to partial or complete lobectomy or to pneumonectomy. In 100 patients 10 or 15 Gm. of sulfonamide was placed in the pleural cavity during the operation. One hundred and three patients received preoperatively intramuscular injections of 15,000 units of penicillin every three hours up to a total daily dose of 120,000 units for a period of from two days to two weeks, during which the patients were also given inhalations of penicillin solution in a dose of 20,000 units every three hours up to a total daily dose of 100,000 units. They also received intramuscular injections of penicillin after the operation for one or two weeks. Empyema developed in 13 per cent of the patients treated with sulfonamide and in 13.6 per cent of those given penicillin. These patients were treated with intrapleural administration of penicillin in daily doses of 40,000 units. Pulmonary empyema complicated pneumonectomy in 17.2 per cent, segmental resection in 40 per cent and lobectomy in 2 per cent. In empyema following pneumonectomy, penicillin was administered for as long as the pleural secretion was serosanguineous. As soon as the fluid became purulent, surgical drainage was resorted to. Empyema after resection of the lung seems to be dependent on the failure of the bronchial stump to close.

Revista Clinica Española, Madrid

21:195-282 (May 15) 1946

Psychosomatic Pathology and Internal Medicine. J. Rof Carballo.—p. 195.
Effect of Variations in Filling of Lesser Circulation on Pulmonary Volume and Elasticity: Latest Experimental Demonstration of Therapy on Mechanism of Asthmatic Crisis. C. Jimenez Diaz, E. Arjona, J. M. Ales, F. Grande, E. López Garcia and J. C. Oya.—p. 207.
New Syndrome of Ulcerating Hodgkin's Disease of Lungs. H. J. Castro Mendoza.—p. 213.
*Action of Nicotinic Acid on Gastric Secretion in Normal and Pellagrous Persons and in Other Forms of Achylia. M. Diaz Rubio, E. Monsalvez and J. M. Masaguer.—p. 216.
Psychic Provocation and Psychogenic Manifestations in Patients with Extrapyramidal Disorders. A. Escudero Ortuño.—p. 220.
Physicochemical Foundations of Phenomena of Allergy and Immunity. J. L. Alvarez Sala.—p. 224.

Nicotinic Acid and Gastric Secretion.—Díaz-Rubio and his associates say that in treated pellagrous subjects they observed no improvement in secretion, achlorhydria remaining as before. In investigations on the action of nicotinic acid they found that the intravenous injection of nicotinic acid produces an increase of free acidity in the gastric juice in normal subjects, and in sufferers from achylia it causes the appearance of acidity. In achylia of pellagra no effect on the acidity is produced but only an increase in the quantity of the gastric juice. The authors think that this action of nicotinic acid is due to the greater vascularization it produces in the walls of the stomach, which in turn stimulates the secretory glands of the stomach. In patients with pellagra, however, the tonus of the sympathetic is lowered, and it is this factor which may explain the lack of response to nicotinic acid in these cases.

Nordisk Medicin, Gothenburg

30:973-1036 (May 3) 1946

Skin Reaction to Cold and Mechanism of Injuries from Cold. L. Kreyberg.—p. 973.

Hospitalstidende

Isolated Fracture of First Rib. A. Friese Christiansen.—p. 977.
*Pyoderma Gangrenosum. H. K. Kristiansen.—p. 980.
Clinical Experiences with Methylthiouracil Treatment of Thyrotoxicosis. K. Lundbaek.—p. 982.

Finska Läkaresallskapets Handlingar

Epidemic of Field Fever (?) in Finnish Lapland. H. Horthng.—p. 1001.
Experiences in Operations for Habitual Luxation of Humerus. H. Hublin.—p. 1004.
Hemolytic Anemia of Lederer Type in Gastric Cancer with Metastases to Bone Marrow. L. E. Tötterman.—p. 1006.

Norsk Magasin for Laegevidenskapen

Hemoglobin Values in Norwegian Refugees on Arrival in Sweden. B. Kaada.—p. 1013.
Standard Metabolism Values During Food Crisis in Norway 1942-1943. D. Elstad.—p. 1019.
Apicitis, Inflammation of Apex of Petrous Portion of Temporal Bone. T. Leegaard.—p. 1023.
Gastric Ulcer, Penetration of Heart; Death from Rupture of Heart. A. S. Johannessen.—p. 1029.

Hygeia

X Ray Control of Positive Miniature Radiography Cases. R. Lundström.—p. 1031.
Contribution to Diagnosis of Trichlorethylene Intoxication. S. Forssman and A. Ahlmark.—p. 1033.

Pyoderma Gangrenosum.—Kristiansen describes a rare disease which appears as a rapidly advancing gangrene of the superficial layers of the skin, with central necrosis, granulation tissue and intervening epithelial islands and peripheral undermining of the epidermis. It is accompanied with hypochromatic anemia and increased sedimentation reaction. The general condition is as a rule unimpaired. The regional lymph nodes are not affected. The disorder seems to predominate in women of ages between 16 and 60, and the duration is usually from nine to over twelve months. To date only 1 fatal case has been reported. If the course is not threatening, conservative treatment with sulfathiazole locally and by mouth is advised. In the personal case described there were dilated lymph vessels partly covered with epithelium derived from the surface epithelium.

Book Notices

Enzymes and Their Role in Wheat Technology. Edited by J. Ansel Anderson. American Association of Cereal Chemists, Monograph Series, Volume I. Cloth. Price, $4.50. Pp. 371, with illustrations. New York: Published by Interscience Publishers, Inc., for the American Association of Cereal Chemists, 1946.

The per capita consumption in the United States of the milled products of wheat is about 160 pounds each year. The principal converted products of wheat are bread and other bakery products. For more than twenty years it has been recognized that the enzymes which naturally occur in wheat have a significant effect on the baking characteristics of the flour. It is appropriate, therefore, that the first volume in the series of scientific monographs now being sponsored by the American Association of Cereal Chemists should be concerned with the enzymes of this important basic food.

The volume is divided into eleven chapters, the first of which, by W. M. Sandstrom, comprises a general discussion of the chemistry of enzymes. C. H. Werkman discusses the mechanism of alcoholic fermentation, and the subject of yeast fermentation is adequately handled by Lawrence Atkin, A. S. Schultz and C. N. Frey. The remaining chapters are concerned with amylases, esterases, oxidizing enzyme systems and proteases. Each of these subjects is discussed first from the general point of view and then from the point of view of its application to milling and baking technology. This division is a happy one because it permits a well rounded treatment. Thus, Mary L. Caldwell and Mildred Adams present a general review of the significance of amylases in plant and animal tissues. The application of the amylases in milling and baking technology is handled by Eric Kneen and R. M. Sandstedt. Herbert E. Longenecker contributes a chapter on esterases, and Betty Sullivan a chapter on the relation of esterases to milling and baking. In a remarkably brief section E. S. Guzman Barron presents a fairly comprehensive summary of current information about oxidizing systems, while Betty Sullivan reviews the scattered information about oxidizing enzyme systems of wheat and flour. Proteases are discussed by A. K. Balls and Marion W. Kies. The role of proteases in baking is treated by F. C. Hildebrand. Each chapter concludes with a selected bibliography. The book is adequately indexed as to both subjects and authors.

There is thus produced a well rounded volume that should be of interest and value to biochemists generally as well as to investigators in the field of enzymes and in the science of milling and baking. The cereal chemists are to be commended for having so successfully inaugurated a worth while program of sponsoring authoritative monographs in the science and technology of an important class of foods.

Advancing Fronts in Chemistry. Volume II. Chemotherapy. Edited by Wendell H. Powers, Assistant Professor of Chemistry, Wayne University, Detroit. Contributors: William H. Feldman and others. A Series of Lectures Sponsored by Wayne University under the direction of Neil E. Gordon, Chairman, Department of Chemistry. Cloth. Price, $3.25. Pp. 156, with illustrations. New York: Reinhold Publishing Corporation, 1946.

This volume is the second in a series of lectures delivered by competent authorities at Wayne University under the direction of Dr. Neil E. Gordon, chairman of the department of chemistry. The first volume consisted of lectures in the field of high polymers. The present volume includes lectures presented in 1945 by six writers on various phases of chemotherapy. Unfortunately, the lecture on antibiotics delivered by Dr. H. E. Carter of the University of Illinois is not included.

The first lecture, on chemotherapy in experimental tuberculosis, by Dr. William H. Feldman of the Mayo Foundation, is an excellent survey of the field. Dr. Feldman, in critical fashion, expresses the difficulties encountered in interpreting experimental and clinical results in the therapy of tuberculosis. The second lecture is a highly technical consideration of synthetic antispasmodic drugs by Dr. Frederick F. Blicke of the University of Michigan. Dr. E. H. Northey of the American Cyanamid Company presents an informative discussion on the chemistry of the sulfonamide drugs. The antimalarial problem is the timely subject considered by Dr. Harry S. Mosher of Pennsylvania State College, and Dr. C. Kenneth Banks of Parke, Davis & Company chose as his subject organometallic compounds as chemotherapeutic agents. The series concludes with a consideration of past developments and present needs in the chemotherapy of parasitic diseases, by Dr. Willard H. Wright of the U. S. Public Health Service.

The volume is well edited. Each of the chapters is preceded by a bibliographic sketch of the lecturer and succeeded by references to the literature. An excellent index concludes the volume. This series of informative lectures should be a welcome addition to the library of the physician who wishes to keep abreast of the newer developments in the field of medicine.

Psychological Medicine: A Short Introduction to Psychiatry, with an Appendix on Psychiatry Associated with War Conditions. By Desmond Curran, M.B., F.R.C.P., D.P.M., Psychiatrist and Lecturer in Psychological Medicine, St. George's Hospital, London, and Eric Guttmann, M.D., M.R.C.P., Neuropsychiatric Specialist, Emergency Medical Service, London. Foreword by J. J. Conybeare, M.C., D.M., F.R.C.P. Second edition. Cloth. Price, $3.50. Pp. 246, with 20 illustrations. Baltimore: William Wood & Company, 1945.

In the past year there have appeared a number of small manuals on psychiatry which have had considerable worth not only to the psychiatrist but to the physician who is interested in psychologic problems, particularly psychosomatic medicine. The authors of the present book are highly qualified British practitioners who have made contributions before. It is natural that since there are less than 250 small pages the subject cannot be covered completely. For physicians in this country it must be considered inferior to several American books on neuropsychiatry. The problem, for instance, of anxiety neurosis is not very well covered, while the psychoses are discussed in considerable detail. Some organic entities are completely neglected. The British slant is slightly different from ours: there is less emphasis on strictly freudian psychology, and the present authors have a definitely organic slant on certain conditions, such as neurasthenia, which has not been emphasized here. The book is too small for adequate discussions of shock treatment and psychotherapy. It is a substantial book from the standpoint of honest effort, and except for the differences which must occur between nations even in scientific subjects, and except for the need for cutting down information by virtue of its size, it can well be considered an adequate small psychiatric textbook.

Spezielle chirurgische Therapie für Studierende und Ärzte. Bearbeitet von Dr. Max Saegesser. Sammlung medizinischer Lehr- und Handbücher für Ärzte und Studierende. Band II. Cloth. Price, 80 Swiss francs. Pp. 884 with illustrations. Bern: Hans Huber, 1946.

As the title indicates, this is a manual of surgical treatment. Without discussing pathology or diagnosis, it tells what should be done in each specific surgical condition described, and how it is best to do it. The technic, preoperative and postoperative management, the possible pitfalls and how to avoid them are described in step by step detail. The work is up to date, written in clear and simple language, easily understood and followed by students for whom it is intended. The subjects covered in some of the twelve chapters are surgical treatment of diseases of the head, scalp and face and diseases of the chest, the abdomen and the urinary and genital organs. Also covered are injuries and diseases of the bones, joints and spine, as well as those of the blood vessels and peripheral nerves. In the belief that more can be learned from pictures than from words, there are numerous descriptive pen and ink illustrations, which greatly enhance the clarity and value of the text. This book is an excellent and useful addition to the surgical textbooks on this subject.

The Common Sense Book of Baby and Child Care. By Benjamin Spock, M.D. Cloth. Price, $3. Pp. 527, with illustrations by Dorothea Fox. New York: Duell, Sloan and Pearce, 1946.

The popular literature on child care has undergone a remarkable improvement in the past decade. From the dogmatic instructions to bewildered mothers on how to bathe, dress and prepare a complicated formula for the infant of a generation ago, recent publications have shown almost uniformly a more logical tendency with emphasis on understanding of principles rather than on exhortations to follow routine directions. There are today many such books on the market written mostly by pediatricians and psychologists, each giving his views in behalf of better care of the infant and child. The common objective is to make child rearing free from unnecessary anxieties and at the same time cultivate a generation of happier, if not wiser, people.

Apparently with this aim Spock developed the theme of his book. He has incorporated the experiences of a sensible pediatrician into a volume which is an excellent treatise on the subject. Unlike many authors who are inclined to overemphasize some pet subject in which they happen to be most interested at the moment, Spock's pet subject seems to be the child as a whole unit. And as he is attempting to afford the child the benefits of wholesome care, he talks plain common sense to all who constitute the child's social and biologic setting from its earliest embryonic development through adolescence.

The style is simple yet thoroughly informative. The author does not indulge in speculative discussions. He has the happy ability of stating a point, developing it sufficiently to be understood by any person with normal intelligence, then proceeding to the next topic and the next, and so on. The subject matter is well organized. Throughout there is a palpable effort to interpret the child to a world of grown-ups. A most laudable feature in this connection is the discussion of the various phases of health and its possible aberrations at different age levels. The advantages of this arrangement are obvious. It not only affords parents an idea on what they may expect at a particular developmental level but also gives them the opportunity to familiarize themselves with the problems of immediate interest to them.

The advice "If you cannot get a doctor" and "consult your doctor" appears too frequently and is cumbersome and unnecessary. As a general rule people who read books of this type seldom rely on self medication. With the exception of this minor criticism, the book is by far the most instructive as well as the most practical in its field. It may be heartily recommended not only to parents but to physicians as well. Dr. Spock is to be congratulated on a difficult task exceptionally well accomplished.

Studies in Brazilian Anophelines from the Northeast and Amazon Regions. I. An Illustrated Key by Adult Female Characteristics for the Identification of Thirty-Five Species of Anophelini, with Notes on the Malaria Vectors (Diptera, Culicidae). By L. M. Deane, O. R. Causey and M. P. Deane. II. An Illustrated Key by Male Genitalic Characteristics for the Identification of Thirty-Four Species of Anophelini, with a Note on Dissection Technique. By O. R. Causey, L. M. Deane and M. P. Deane. III. An Illustrated Key by Larval Characteristics for the Identification of Thirty-two Species of Anophelini, with Descriptions of Two Larvae. By M. P. Deane, O. R. Causey and L. M. Deane. The American Journal of Hygiene Monographic Series, No. 18, February 1946. The publication of this monograph (No. 18) was financed by the Office of InterAmerican Affairs. Cloth. Price, $1.10. Pp. 58, with illustrations. Baltimore: Johns Hopkins Press, 1946.

This monograph consists of keys for species of Anopheles mosquitoes, both malaria carriers and those of no importance in the transmission of malaria. The malaria vectors represented are Anopheles gambiae, Anopheles aquasalis and Anopheles darlingi. The first part is devoted to the adult female characteristics of thirty-five species, the second part to the male genitalic characteristics of thirty-four species and the third part to the larval characteristics of thirty-two species of Brazilian Anophelini. The keys are accompanied with numerous drawings and photographs of the characteristics most needed for purposes of identification of these mosquitoes. The larvae of two species (Anopheles galvaoi and Anopheles shannoni) are described for the first time.

Gynecologic Nursing. By Robert James Crossen, A.B., M.D., F.A.C.S., Assistant Professor of Clinical Gynecology and Obstetrics, Washington University School of Medicine, St. Louis, Mo., and Frances W. Hoffert, R.N., B.S. Third edition. Cloth. Price, $2.50. Pp. 256, with 191 illustrations. St. Louis: C. V. Mosby Company, 1946.

The third edition of this popular gynecologic textbook for nurses follows the popular plan of co-authorship by a physician and a nurse. This is the best approach to the successful teaching of the medical specialties to nurses. The senior author is the co-author of several popular textbooks on gynecology and brings to this nursing textbook the benefit of his wide experi- It is easy to read and extensively illustrated. In its l plan the book follows the Curriculum Guide prepared by the National League for Nursing Education. Part I presents a survey of the basic knowledge of anatomy and physiology of the reproductive organs. Part II concerns itself with the various gynecologic diseases as well as the common diagnostic procedures. Nursing procedures are emphasized. Review questions and a short bibliography accompany each chapter. This edition should retain the popularity of previous editions.

A Short Practice of Surgery. By Hamilton Bailey, F.R.C.S., F.I.C.S., Surgeon, Royal Northern Hospital, London, and R. J. McNeill Love, M.S., F.R.C.S., F.I.C.S., Surgeon, Royal Northern Hospital, London. Seventh edition. Cloth. Price, 40s. Pp. 1,097, with 1,063 illustrations. London: H. K. Lewis & Co., Ltd., 1946.

The title is perhaps misleading. This is a volume containing over a thousand pages and over a thousand illustrations. It is a complete textbook of surgery from which has been deleted much of the superfluous and ancient material contained in other textbooks. It is concise, is clearly written and makes excellent reading material. The paper, binding and typography are very good, particularly in view of its production in a country ravaged by war for so many years. The seventh edition has been enlarged and brought up to date and contains much very new material. A new chapter on the larynx has been included. The illustrations, almost one fifth of which are colored, are excellent and help greatly in making the text more readable and understandable. The index is inclusive (fifty-one pages). The small glossary giving the old terminology of anatomic names should be helpful to many readers. Another interesting feature is the inclusion of brief biographic footnotes. Lack of bibliography is really the one thing that makes this volume a "short" practice rather than an excellent textbook.

Autopsy—Diagnosis and Technic. By Otto Saphir, M.D., Pathologist, Michael Reese Hospital, Chicago. Foreword by Ludvig Hektoen, M.D. Second edition. Fabrikoid. Price, $5. Pp. 405, with 69 illustrations. New York & London: Paul B. Hoeber, Inc., 1946.

This edition, like the first of 1939, furnishes medical and graduate students in pathology concise yet clear descriptions of procedures in the performance of the necropsy and the common gross changes that may be seen. The illustrations cover technic and anatomic relations important in the observation and removal of normal and pathologic structures. Eighteen different tables are designed to classify and differentiate by distinctive characteristics the common lesions in the important organs. In this edition the discussion on diseases of the breast and the changes in stillbirths and newborn infants are extended. Brief chapters are added on examinations of the nose and sinuses and on anatomic changes in vitamin deficiencies and certain tropical diseases. Like many new books and revised editions the changing findings of the patient and appearances of viscera at the necropsy due to chemotherapy or antibiotics are not mentioned or described. However, the book is an excellent aid and a reliable, quick reference work for the student who finds the ordinary textbook on pathology inadequate in the description of the necropsy.

Proceedings: Conference on Diagnosis in Sterility Sponsored by the National Committee on Maternal Health, January 26-27, 1945, New York City. Edited by Earl T. Engle. Fabrikoid. Price, $5. Pp. 237, with illustrations. Springfield, Illinois: Charles C Thomas, 1946.

This small volume presents a copy of the Proceedings of the Conference on Problems of Human Fertility held under the auspices of the National Committee on Maternal Health in January 1945. Papers in the first group are devoted to an evaluation of gonadal functions in the male by a study of the semen and testicular biopsies. The role of the accessory glands in fertility in the male is discussed by Huggins. Papers in the second group concern themselves with diagnostic methods for evaluating fertility in the female. Endometrial biopsies, basal body temperatures, methods of studying tubal patency and the cervical mucus as a factor in sterility are discussed. Each of these papers is presented by a well known authority in his special field. A general discussion by the members of the conference is included. Treatment of sterility was not considered at this meeting. These conferences, sponsored by the National Committee on Maternal Health, on problems of fertility provide an excellent means for an interchange of ideas by the many workers in this special field.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

IMMUNIZATION OF BABY FOR TRIP TO JAPAN

To the Editor:—Advice is sought by the wife of an army officer on the advisability of taking a baby to Japan. What dosage of yellow fever, cholera and other immunizations should be given a 6 months old baby?

M.D., Alabama.

Answer.—Taking a healthy 6 months old baby to Japan would seem permissible if the father can assure himself in advance that suitable sanitary living accommodations are available. Taking younger babies at this time is wisely being discouraged by the army medical authorities. Yellow fever immunization is not necessary unless the child is to be taken through one of the yellow fever areas of South America or Africa as delineated officially by UNRRA under the International Sanitary Conventions. Neither Japan nor any place traversed by travel across the Pacific is in such an area. The dosage of yellow fever vaccine of standard type (17 D) for an infant is the same as for an adult, as the material is a living, modified virus. Administration can be arranged at several centers through the United States Public Health Service. Smallpox vaccination of infants going to the Orient is definitely necessary and is required. It is also recommended that infants be given diphtheria toxoid. Cholera and plague vaccinations are not insisted on or recommended for young infants.

HAZARDS OF PHOTOENGRAVING

To the Editor:—A photoengraver has had a morning cough over a period of years which at times causes him to vomit. Repeated roentgenograms of the chest have been negative and there does not seem to be any reason for this cough. Some time ago he passed a bloody stool, and a gastric series revealed a duodenal ulcer. After prolonged ulcer management the ulcer has healed, but the patient continues to cough. With what fumes would he come in contact with in photoengraving? Would these fumes affect his general health?

Leo B. Sedlacek, M.D., Cedar Rapids, Iowa.

Answer.—The trade of photoengraving has become so complex and so many processes and different substances are utilized that it is necessary to learn from the patient what chemicals are used by him. Long ago Hayhurst recorded that "photoengravers as a class are probably exposed to the greatest number of poisonous substances to be found in any single industrial calling." Earlier statistical records indicate a high frequency of respiratory disorders. Among other materials likely to be involved are mineral and organic acids, ammonium and bromium compounds, aniline, benzene, naphtha, chromium compounds, alkalis, chlorinated compounds including chloroform, cyanides, sulfides, formaldehyde, glues, gums, albumin and varnishes. The most likely single offender seems to be nitric acid or nitric oxides. In addition to possible direct respiratory tract irritation, some of the agents mentioned are sensitizers.

PENICILLIN FOR DIABETIC FURUNCULOSIS

To the Editor:—What is the present status of the use of penicillin, orally or parenterally, in the treatment of diabetic furunculosis?

Samuel S. Schept, M.D., Union City, N. J.

Answer.—The use of penicillin parenterally for the treatment of furunculosis in patients with diabetes has been highly satisfactory. In addition to penicillin, restrictions of diet and extreme care of the skin are important features. Most of the treatment that has been carried forward has been with the use of parenteral penicillin. If oral penicillin is used, at least three to five times as much will be needed.

USE OF OXYGEN FOR PENICILLIN AEROSOL

To the Editor:—A number of articles on the administration of penicillin vapor or aerosol penicillin have suggested the use of oxygen. Is oxygen necessary or would compressed air serve as well?

Charles E. Atkinson, M.D., Banning, Calif.

Answer.—Oxygen is used to aerosolize the penicillin. It is not necessary to use oxygen for this purpose, and air under comparable pressure can be used for the same purpose.

PENICILLIN FOR ERYTHREMIA

To the Editor:—Is penicillin effective in the treatment of erythremia? A white man aged 67 was treated several years ago for hypertension and cerebral hemorrhage. For the past six months he has complained of weakness, easy fatigue, headache, vertigo, dyspnea, sweating, partially dulled mental powers and a general run down condition. The blood pressure was 180/100, and the spleen and liver were not palpable. A diagnosis of erythremia was made on the basis of the symptoms and the finding of hemoglobin 115 Gm. per hundred cubic centimeters Sahli, red blood cells 6,500,000, white blood cells 16,000 and a normal differential with no abnormal cells. The patient was given intramuscular penicillin injections of 200,000 units once daily for eight days. One week after the completion of this treatment the patient reported that he felt much improved and the blood count fell to red blood cells 5,060,000, white blood cells 12,000 and hemoglobin 100 Gm. per hundred cubic centimeters.

Nicholas A. Mandelos, M.D., Washington, D. C.

Answer.—In the 13,000 cases reported to the Committee on Chemotherapeutics and other Agents, National Research Council, and the Committee on Medical Research of the Office of Scientific Research and Development concerning the use of penicillin in various disorders, none with erythremia were treated with penicillin. It will, of course, be necessary to follow the patient referred to in the query for a much longer time to determine whether or not the decrease in the red blood cell count and hemoglobin are permanent.

FINGER INFECTIONS IN EGG POWDERING PLANT

To the Editor:—During the last four years a number of people in this city have developed infections of the fingers, the cause of which has not been determined. An egg powdering plant is located here. Several people working in the plant have acquired severe infections which eventually have required amputation.

L. L. Roberts, D.V.M., Chanute, Kan.

Answer.—The files of the Office of Dermatology of the U. S. Public Health Service do not contain records of infections similar to those described in the query among workers engaged in powdering eggs.

To determine the actual cause of these infections, studies of the occupational process should be made, including bacteriologic studies of the products in the various stages of the process, and correlation of these results with the occupation of the workers affected and the organisms causing the infection. In Occupational Diseases of the Skin by Schwartz and Tulipan there is a chapter on methods of investigation of occupational diseases of the skin.

An effective method of prevention before the actual cause is discovered consists in wearing rubber gloves, impervious sleeves and aprons, and frequent washing of the hands with soap and water followed by dipping the hands in a mild antiseptic solution.

SODIUM TETRATHIONATE FOR ACUTE THROMBOANGIITIS OBLITERANS AND MIGRATING PHLEBITIS

To the Editor:—In the June 29, 1946 issue of The Journal the use of sodium tetrathionate in the treatment of superficial migrating phlebitis is mentioned. Please discuss dosage, mode of administration and action and give references.

S. Davidson, M.D., Boynton Beach, Fla.

Answer.—Sodium tetrathionate has been advocated by Theis and Freeland (Thromboangiitis Obliterans: Treatment with Sodium Tetrathionate and Sodium Thiosulfate, *Arch. Surg.* **40:**190 [Feb.] 1940) particularly in acute cases of thromboangiitis obliterans. They found an increase in skin temperatures, a decrease in pulse rate and increase in the oxygen carrying power of the blood; it counteracted the effect of smoking on the vascular system. They have also used this drug—which has a more delayed but also more prolonged action than sodium thiosulfate—in the treatment of arteriosclerosis, Raynaud's phenomena and other forms of vascular disease. It is quite possible that this strong reducing agent does affect the clotting mechanisms; de Takats (*Surgery* **14:**661 [Nov.] 1943) showed that it increased the patient's response to heparin. Others (Allen, Barker and Hines: Peripheral Vascular Diseases, Philadelphia and London, W. B. Saunders Company, 1946) have questioned the value of the drug.

Clinically, in the acute exacerbations of migrating phlebitis or thromboangiitis obliterans daily injections of sodium tetrathionate maintained for ten to fourteen days seem to alleviate the symptoms and bring on a remission faster than it spontaneously occurs. It does not cure the disease but acts somewhat like foreign protein therapy, though without chills, fever and other complications. Occasionally a patient may become dizzy or nauseated, and once in a great while a sensitization reaction may occur. The drug contains 44 per cent organic sulfur; it comes in ampules containing 0.6 Gm. in the form of a dry powder, which is dissolved in 10 cc. of sterile distilled water and slowly injected intravenously. One injection may be given twice a day in hospitalized and once a day in ambulatory patients for ten to fourteen days. If this is effective, injections can be continued for another two weeks. It is a good preparatory measure for patients in the active stage of thromboangiitis obliterans before sympathectomy is undertaken.

MAMMARY HYPERTROPHY IN INFANTS

To the Editor:—A girl aged 6 months has had enlarged breasts since birth. In the past few months the breasts have grown more rapidly to their present size of hickory nuts. They are firm to palpation and do not appear to be simply fat tissue. Vulvar enlargement and colostrum secretion are absent. Because of allergic eczema the infant was given goat's milk, which relieved the eczema immediately. Apparently the acceleration of breast growth began with the use of the goat's milk formula. Is there evidence that goat's milk contains an estrogenic substance in quantities sufficient to produce this effect? Should an ovarian tumor be suspected?

M.D., New York.

ANSWER.—As far as known there is not any relationship between the ingestion of goat's milk or of any animal milk to the mammary enlargement noted in the infant described in the query.

In the neonatal period mammary hyperplasia with some secretion is common in breast fed infants. This is most commonly encountered during the second week of life and may continue as late as the third month. This infantile mammary secretion, when examined, has been found to be chemically similar to human colostrum. It is said to be due to two hormones which are transmitted to the fetus through the placenta, namely estrogen from the ovary, which produces the breast hypertrophy, and prolactin from the mother's pituitary, which causes the colostrum-like secretion. Both of these endocrine substances have been demonstrated in the urine of infants during the first few days of life. This neonatal mammary hypertrophy and secretion of "witch's milk" have been noted equally in male and female infants.

Precocious mammary development may be caused by pituitary, adrenal, ovarian, renal and pineal hyperplasia or tumors. Endocrine therapy may also be a cause; however, the excessive breast development from such causes is accompanied by early appearance of pubic and maxillary hair and genital overdevelopment. As hirsuties and abnormal sexual development are stated to be absent in the infant under question, it seems unlikely that a tumor would be the cause of the breast enlargement. It might be well to analyze the urine of this infant for an increased amount of estrogenic substances. Further, as the enlargement is bilateral, it is improbable that a local growth is present. Well fed, well developed normal infants often exhibit bilateral enlargement of the breast area.

PROGRESSIVE MUSCULAR DYSTROPHY

To the Editor:—A woman in her early fifties on the faculty of one of the country's large universities has suffered for many years from progressive muscular dystrophy. This was first noticed years ago in her arms. However, during the past few years she has been progressively losing the use of her legs. It is now difficult for her to rise from a chair, and, when standing, her legs are unsteady. She has been on large doses of brewers' yeast and 100 mg. of thiamine hydrochloride daily, together with 15 Gm. of aminoacetic acid. In spite of this her condition is becoming gradually more severe.

M.D., New York.

ANSWER.—A specific form of treatment has not been devised for progressive muscular dystrophy. Recently the effect of vitamin E has been estimated by a considerable number of observers. In general the results obtained by using vitamin E in the form of alpha tocopherol, or the synthetic product d, l-alpha tocopherol acetate, have not been good. A few reports, following the use of large doses, have been slightly encouraging.

Shank and his colleagues used aminoacetic acid, vitamin E and pyridoxine in the treatment of 40 patients with progressive muscular dystrophy at the hospital of the Rockefeller Institute for Medical Research. All forms of treatment proved to be singularly ineffective. In the cases studied the amount of creatinine excreted daily remained remarkably constant, but there was a definite decrease in the amount. On the other hand, the quantity of creatine excreted was much more variable and in most cases was notably increased. They found, as others have done, that testosterone caused retention and storage of creatine but produced no significant change in excretion of creatinine.

Hoagland and others made a more detailed study of 6 boys with progressive muscular dystrophy from the Rockefeller Institute group and compared the findings with 5 normal boys. They concluded that the diminished excretion of creatinine in dystrophy was a more specific phenomenon because of its constancy than excessive excretion of creatine. Many other diseases and even physiologic states in normal human beings lead to an excessive output of creatine. The decrease in creatinine therefore is the most important test of activity of the disease in cases of progressive muscular dystrophy. Patients were given prolonged courses of gonadotropic and thyrotropic principles of the hypophysis and desoxycorticosterone acetate without any change being noted in the clinical state. In 1 case, however, there was improvement following the administration of testosterone propionate, this being the hormone known to cause retention of creatine.

Milhorat and Bartels in observing 15 patients with muscular dystrophy of a progressive type thought that the muscular changes closely resembled the dystrophy induced in animals by deprivation of tocopherol. In animals, when tocopherol is given orally, the creatinuria is promptly reduced and muscle function is restored. When the same vitamin is given parenterally to animals, no effect takes place. This observation led Milhorat and Bartels to suggest that some change takes place in tocopherol in the gastrointestinal tract. The authors believe that tocopherol forms a condensation product with some other substance and that this substance is inositol. When these two drugs were combined, effects were observed on the creatinuria in patients with muscular dystrophy and they suggested that the drug be given further trial.

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MEDICATION BEFORE TONSILLECTOMY

To the Editor:—There is a difference of opinion among doctors as to whether or not patients should have premedication before anesthesia for tonsillectomy. What is the consensus on this matter?

F. L. Schade, M.D., Worthington, Minn.

ANSWER.—There is generally a difference of opinion among surgeons as to the desirability for premedication before tonsillectomy, both in adults and in children.

Most surgeons stanchly advocate premedication because of the four main functions of all premedications: (1) psychic depression or hypnosis, (2) heightening of the pain threshold, (3) reduction of reflex irritability and metabolism and (4) counteraction of undesirable side action of the anesthetic agent.

Those who oppose the use of premedication base their arguments mainly on the belief that its use favors the occurrence of postoperative complications. They feel that the depression of the cough reflex and the thickening of bronchial secretions favor the development of pulmonary complications and, further, in the presence of a diminished cough reflex there is increased likelihood of the aspiration of vomitus and blood. In addition, they contend that, in the presence of prolonged postoperative narcosis induced by premedications, postoperative bleeding may not be promptly discovered.

These objections are invalid if the premedication is properly used. This means individualization of dosage and, as important, that the medicine be given at the proper time preoperatively. If so given, its peak effectiveness is during operation, thus affording the maximum benefit, while its effects rapidly subside postoperatively, causing a minimum of undesirable after-effects.

It is generally agreed that premedication should be employed in tonsillectomy.

IMMUNE SERUM GLOBULIN FOR ORCHITIS OF MUMPS

To the Editor:—Is immune serum globulin of value in the prevention of orchitis in mumps in young adults?

James I. Knott, M.D., San Diego, Calif.

ANSWER.—It is extremely doubtful whether immune serum globulin would be of any benefit for the purpose suggested.

Human convalescent mumps serum has been used for the treatment of mumps and its complications as well as for prevention. However, it is questionable if there is a true specific serum which is of value for preventing or treating mumps orchitis

TREATMENT OF SPASTIC PARALYSIS

To the Editor:—Are there any recent developments in the treatment of spasticity in children?

Winifred Ingersoll, M.D., Laramie, Wyo.

ANSWER.—Recently there have been reports of improvements in some patients with spastic paralysis with the use of neostigmine and curare. Such treatment should be carried out, however, under the supervision of a neurologist.

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NEW HORIZONS IN INDUSTRIAL HEALTH AND WELFARE

PROGRESS IN INDUSTRIAL HEALTH

REAR ADMIRAL JOEL T. BOONE (MC), U.S.N.
Washington, D. C.

This article and the articles by Andrew Fletcher and Boris Stern, which follow, were read in a panel discussion at the Seventh Annual Congress on Industrial Health in Boston, October 1. The Moderator was Dr. William A. Sawyer of Rochester, N. Y.

The progress made in industrial health in the United States over the past few decades has been continuous, although by no means regular and steady. The noteworthy advances that have been made are attributable primarily to the efforts, measures and programs undertaken in individual plants and in certain branches of industry. The value of an overall industrial health program applicable to all industries and occupations in the United States has never been convincingly sold to the public.

Some of the difficulties inherent in such a program are due to disagreement as to the relative responsibilities to the workers of management and organized labor, suspicion as to the motives of any health measures undertaken by management, inadequacy of health education, difficulties in delineating the functions of the medical and applied professions, confusion of "industrial health" with employee "morale and welfare" and, of course, the question of costs and who shall bear them. Nevertheless, the future of industrial health looks bright.

One of the industries in which industrial health progress has been wofully neglected is bituminous coal mining. This industry, which has been described as basic to the industrial economy of the nation, is scattered over twenty-six states, employs about 400,000 miners and is composed of about eight to nine thousand separate operations, ranging from the proverbial shoestring enterprise (the so-called "wagon mine," "truck mine" or "dog-hole") to the very large and integrated captive mine or big-scale operation. It is significant to note that 12 per cent of the mines produce about 72 per cent of the annual tonnage. On the other hand, 46.5 per cent of the mines produce only 2 per cent of the coal. Thus, although there is an extreme range in the size of mining operations, industrial health problems are common throughout the industry.

Certain aspects of the industrial health problems are encompassed in the demands which the labor unions made early this year during the negotiations with management over renewal of the union contract in the soft coal industry which expired March 31. Partly because of the inability of labor and management to agree on issues concerned with the financing and management of funds for medical and hospital care of the workers and for welfare and retirement benefits, the bituminous coal mines were closed down during April and a major part of May. When the negotiators advised the President of the United States that they could not come to an agreement, the President issued an executive order directing that the government technically take over operation of the mines. The responsibility for administering the operation of the mines was placed in the Interior Department, which is the government agency primarily concerned with natural resources.

The Secretary of the Interior, Hon. J. A. Krug, called on Admiral Ben Moreell of the Civil Engineer Corps, United States Navy, who had made a notable record in handling a similar situation in the oil industry last year, to become Federal Coal Mines Administrator. A week after government seizure Secretary Krug, with the assistance of Admiral Moreell, negotiated a contract with the miners' union, which became effective on May 29. Various provisions of this contract deal with health matters, among which is section 5, which reads as follows:

> The Coal Mines Administrator undertakes to have made a comprehensive survey and study of the hospital and medical facilities, medical treatment, sanitary and housing conditions in the coal mining areas. The purpose of this survey will be to determine the character and scope of improvements which should be made to provide the mine workers of the nation with medical, housing and sanitary facilities conforming to recognized American standards.

To carry out the provisions of section 5, the services of the Naval Medical Corps were sought, and Secretary Krug, with the approval of the President of the United States, selected Rear Admiral Joel T. Boone (MC), U.S.N., who was at the time inspector, Medical Department Activities, Pacific Coast, to serve as the director of the medical survey. Admiral Boone, with the assistance of a distinguished officer of the Navy Civil Engineer Corps, Commodore Charles T. Dickeman, began at once to plan and organize the survey.

It was apparent that to investigate all phases of the problem in detail through first-hand inspection of all the eight to nine thousand operating mines, or even of the approximately 3,500 mines, producing more than 50 tons daily, which were under seizure by the Coal Mines Administration, would be a task that could not be completed within a possible period of five or ten years and would therefore lose considerable value through the passage of time. It was decided, therefore to limit the survey to the more important aspects of the study and restrict the first-hand investigations to a percentage of the mines statistically selected by established sampling procedures. Accordingly, about 15 per cent of the mines producing 50,000 tons or more annually were chosen by a random sampling

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This in no wise represents the final report of the Director of the Medical Survey.

method, the largest number of mines being chosen in areas where the number of working miners was the greatest, and the least number of mines being selected in areas where the number of working miners was the smallest. Agreement as to the mines selected was sought from management and labor.

Five teams of naval officers were organized to make the field inspections, each team being headed by a medical officer and including an engineer officer and a welfare and recreation officer. Each team, after being briefed on procedure and supplied with the questionnaire forms, was dispatched to one of the five areas into which the Coal Miners Administration had divided the country for administrative purposes. The territory comprising each of the five areas is as follows: Area 1, headquarters at Pittsburgh, comprising coal mining communities of Pennsylvania, northern West Virginia, Ohio and Maryland; area 2, headquarters at Ashland, Ky., comprising Kentucky, southern West Virginia, Virginia, Tennessee and Alabama; area 3, headquarters at Chicago, comprising Illinois, Indiana, Iowa and Michigan; area 4, headquarters at Kansas City, Mo., comprising Kansas, Missouri, Arkansas and Oklahoma, and area 5, headquarters at Denver, comprising all western bituminous coal producing states.

At the same time, in order to provide assurance that the mines selected for study were representative of the industry as a whole and to provide data for checking the accuracy of the information obtained by the field teams, simplified questionnaires were devised and sent to mine union officials and to operators of all mines of which the government had record. The director of the medical survey group and members of the headquarters staff went into the field to establish public relations, publicize the program, enlist the cooperation of agencies interested in the problem and obtain information which could be used in evaluating and interpreting the statistical data acquired by the field teams.

The fact that the survey is industrywide introduces many variable factors of geography, geology, climate, customs, laws and economics. On the other hand, the bituminous coal mining industry provides the advantages of fairly well standardized operating methods and uniform wage rates for employees, which, incidentally, are above the general average for industrial workers. The industry as a whole is highly competitive. Competition for markets exists between individual producers, as in other industries; between different groups of operators operating in different freight-rate zones, and between the industry as a whole and producers of other fuels, such as natural gas and petroleum.

Another pertinent characteristic of the industry is that, unlike manufacturing enterprises, the operator is limited in his selection of site, having to go where the coal seam is located. The coal entrepreneur must bring his equipment, electricity and supplies; he must, except in certain areas, bring in labor, and he must provide housing and other facilities and services at places where the coal lies.

This restricted choice of location has given rise to certain notable differences in the regional nature of coal mining communities. For example, in the Far West and in the southern Appalachian area coal mines are naturally situated away from centers of population, and, accordingly, the condition has given rise to coal "camps" which have become permanent communities. On the other hand, in the Midwestern states of Illinois and Indiana the coal deposits are located near established rural or urban towns or, in recent years, within easy reach from established settlements by motor vehicle and, consequently, no "company towns" exist. In the mineralized zones of Oklahoma and Arkansas underground coal mining has been for some time an irregular and seasonal source of employment, with the workers engaged during the remainder of the year in small farming ventures or in other part time occupations; consequently the miner population, rather than residing in close proximity to the mine, is scattered within a considerable radius. In the northern Appalachian area, particularly in Pennsylvania, the establishment of numerous cities, towns and other settlements resulting from the steady growth of industry, commerce and population has minimized the historic necessity of having company towns, and a number of the larger operators, over a period of years, have been selling their company-owned houses to the individual miners.

Under such a wide variety of conditions it becomes very difficult to assess the degree of responsibility of the operator, miner, state and local political bodies and others concerned in sanitation, water supply, sewage and refuse disposal, pure food and milk supplies and similar public health matters. It raises serious questions as to the methods of effecting higher standards of communal living.

No elaborate survey is required to substantiate the fact that some coal mining communities are maintained or, rather, are permitted to exist in a condition which is below any standard of living that is acceptable to the general American public. There are exceptional cases in which the houses are hazardous, the means for maintaining a comfortable temperature is lacking, the water supply is contaminated, garbage and refuse are not removed or are thrown to hogs, streams are polluted, screens and other measures of insect control are nonexistent, refrigeration is unknown, milk is disease laden and excreta and filth are close neighbors to the inhabitants.

There are a large number of "company towns" where one or several of such menaces to public health prevail and where measures to eliminate or control them are not being undertaken. In all fairness, however, it should be stated that there are also a number of company towns where living conditions are maintained on a par with the best of incorporated communities and where an active interest in public health is maintained.

The last sentence of section 5 of the Krug-Lewis agreement contains the phrase "medical, housing and sanitary facilities conforming to *recognized American standards.*"

As far as can be determined, no such "standards" exist, for it is not possible to find anywhere in the literature any definition of what constitutes recognized American standards; nor does it seem possible to measure accurately such a variable. The Medical Survey Group in this respect must be guided largely by personal observation rather than by statistical averages. What is decidedly substandard is relatively easy to recognize, and what patently appears above standard is readily discernible, but the accurate averaging of the broad range of conditions in between the two extremes defies objectivity. Until accurate yardsticks are devised, it must remain a matter of subjective judgment. One thing appears certain, and that is that conditions change with time and that the "standards" of today are not necessarily the "standards" of tomorrow.

The Medical Survey Group is not concerned with isolated instances but, rather, with the overall picture. It deals not with individual communities but with all coal communities. Whether or not the survey being conducted will substantiate the oft repeated allegations that the communities which owe their existence to coal mining are far below acceptable standards of living is conjectural at this time. It should be borne in mind, however, that similar allegations have been made with respect to other American industries.

Before proceeding further, the prevailing confusion regarding the provisions in the Krug-Lewis agreement for a medical and hospital fund and a welfare and retirement fund should be dissipated. The medical and sanitary survey which is called for has no direct relationship to these funds. The medical and hospital fund is to be made up of the deductions which the miners pay for medical care and hospitalization and which is now generally collected by management. This money will, at an agreed on date, be turned over to a group of trustees who are to be appointed by the head of the miners' union, the president of the United Mine Workers of America. The welfare and retirement fund, on the other hand, is a new fund created by the establishment of a royalty of 5 cents on each ton of coal mined and is being paid by the operators into a fund managed by a board of trustees made up of one appointee of the union, one appointee of the government as operator of the mines and a third member selected mutually by the other two members. This welfare and retirement fund is to be used for "making payments to miners, and their dependents and survivors, with respect to (1) wage loss not otherwise compensated at all or adequately under the provisions of federal or state law and resulting from sickness (temporary disability), permanent disability, death or retirement, and (2) other related welfare purposes, as determined by the trustees." Provision is made in the contract for the correlation of the two funds.

It is apparent from the wording of section 5 of the agreement between the government and the miners' union that the medical survey deals broadly with the healthfulness of coal mining communities and with the character of the medical attention given to the mine workers. Nevertheless, in an industry which has a long-established record for the highest frequency rate and the second highest severity rate of accidents—in other words, in a definitely hazardous industry, in which the employees work underground in limited artificial light, under conditions where air is artificially moved, humidity varies, considerable quantities of dust and gases are created, loud noises are produced, and erect posture in many instances is not possible—industrial health is of vital importance.

From personal observation and from a scanning of many of the reports which have been transmitted by the field teams of the Medical Survey Group, it is evident that medical practitioners in coal mining communities pay almost no attention to industrial health matters. It is regrettable to note that the mine physician who has taken the trouble to enter and familiarize himself with the mine, much less even to make a cursory occupational study of the men he treats, is a rarity. Further, only the exceptional ones attempt to familiarize themselves with industrial health studies which have been made in the coal mining industry by others. As for the practice of preventive medicine, there is a deplorable lack of interest. With few exceptions the mine physician appears to be concerned only with traumatic surgery and the general practice of medicine.

Prepayment medical plans and hospitalization plans are common in the coal industry. Regardless of geographic location, the miner expects deduction from his wages to be made for ordinary medical care, and the physician in mining communities, with few exceptions, receives his income directly or indirectly from the funds obtained in this way. Although there are many instances where the physician is selected by the miners through their union or through a committee, but with company approval, in most instances that have been observed the selection is made by the operating company, thus engendering a suspicion by the miner that in cases involving compensation for accidents or occupational illness the doctor is partial to the views of the management. This suspicion offers handcaps to any industrial health work he might endeavor to undertake.

If, for example, the physician should attempt to promote preemployment or preplacement examinations, his motives are suspected, as the labor unions have long contended that such examinations, except of the most cursory character, have been utilized to deny employment to eligible applicants. Consequently, under the present system of employing doctors at mines the physician is limited usually to "what he can see and feel."

The coal industry is sorely in need of industrial health studies and practice. It offers a challenge and a unique opportunity to the medical profession. With little difficulty the profession should be able to obtain the cooperation of management and labor in such a program. Here is a field where the lessons of job analysis learned from the many studies in other industries can be readily applied. Here is a field in which preplacement examinations, if in existence, could be an essential adjunct to the adequate practice of medicine, for the examiner in these cases is also the physician.

Of course, many industrial health studies have been made in bituminous coal mining, particularly with reference to the harmfulness of coal dust. But it is suggested that a wider and continuous program should supplement these earlier studies. Related industries have undertaken programs such as follows:

In addition to preplacement examinations, annual or other periodic examinations of employees are made. Illness and accident records are maintained and analyses made of them. Studies are conducted on fatigue, effect of the hours of work, relation of age to productivity, fumes from explosives and machinery and the effects of mine humidity, temperature, dust and low percentages of oxygen in air. Follow-ups are made of injury cases and illnesses.

There is no affirmative evidence, except in rare instances, that the company doctor or the practicing physician in mining communities goes into the mines for the express purpose of observing at first hand the working environment of his patients. He seemingly is not interested in, and does not help to promote or teach, first aid. He has only a casual interest in the local problems of nutrition and in his patients' housing, water supply, food and milk supply, sewage disposal, welfare and personal hygiene. He hardly ever, except in epidemics, maintains contact with or enlists the cooperation of public health officials and others concerned with stream pollution and similar matters which are beyond his own personal control.

Company doctors, mine operators and labor officials have a joint responsibility in the carrying out of a comprehensive program of industrial health and preventive medicine. There is much that each group can do on its own, but on the medical profession falls the responsibility of inciting the three to the need for industrial health work in mining communities. The promotion of industrial health is not an easy task. Above all, public education in public health matters is essential, for only through widespread understanding of such matters can private practitioners as well as public agencies be supported in measures which science and technology have proved to be wise and beneficial.

The public has no true concept of the magnificent role the medical profession plays in their lives. Medicine is a profession which engenders pride in the practitioner. It is a profession which has been ready to meet every challenge. When the statistics on selective service were published, showing that in the early part of the war 54 per cent of America's young men, according to the standards then adopted, were not fitted for military service in time of the nation's greatest need, the medical profession took the lead in urging the public to drop their complacency and to show, instead, concern over the health of the nation.

The situation in the coal mining industry, though confined to a limited but important segment of the American people, presents another challenge to the medical profession as researchers, educators, healers and leaders. That the medical profession will accept the challenge to elevate the standards of health of the 400,000 miners and their families can readily be vouchsafed. By doing so the profession can contribute inestimably to the raising of the health standards of the nation.

NEW HORIZONS IN INDUSTRIAL HEALTH AND WELFARE

ROLE OF MANAGEMENT IN MEDICAL PLANS

ANDREW FLETCHER
Executive Vice President, St. Joseph Lead Company
President, Industrial Hygiene Foundation
New York

The assigned title is so general and the horizons are so broad that I will confine the "horizon" to the point of view of management in reference to increased participation in health and medical plans, with special reference to the thought that industrial health is likely to be a factor in collective bargaining in the future.

I should emphasize at the outset that the Industrial Hygiene Foundation is basically a nonprofit research organization supported by about three hundred industrial companies for the advancement of employee health; its function is solely to find facts and disseminate such information, based on facts, to management, labor and government. As a representative of the foundation I should not and could not express a view on the rather controversial subject assigned me. I cannot speak for "all" industry, as each has its own problems and point of view which are influenced by local conditions. The thoughts which I will outline are solely those of an individual who has always been vitally interested in the improvement of industrial health, the lessening of accident hazards and the development of a satisfactory basis of mutual respect between employer and employee. The St. Joseph Lead Company, with which I am associated, is the largest miner of lead in the United States and one of the major zinc metal and oxide producers. This company thoroughly realizes from its own experience, over a long period of years, that dollars invested in improved working and living conditions pay large dividends in dollars as well as in human happiness.

As good health is the most important asset in life, the development of healthful conditions should be the one common meeting ground of agreement between management and labor. Health should not be a subject to be pulled apart, shoved around and bargained about. Of course, there may be differences of opinion in the procedure and technics employed in approaching the goal of maintaining the health of workers and in the method of increasing the ultimate profit of the employer by improved working and living conditions. Such matters are doubtlessly appropriate subjects for discussions between the interested parties, but I emphasize that technics are but tools. If an employer fails to remedy a hazard or a menace which contributes to poor working conditions, this constitutes a legitimate grievance. It should not be necessary, however, nor is it desirable, that fundamentals of health maintenance become matters of collective bargaining any more than should the principles of management and engineering.

TABLE 1.—*Comparative Absenteeism Percentages, Southeast Missouri Division, St. Joseph Lead Company*

Reasons for Absence	1940	1941	1942	1943	1944	1945	26 Wk. 1946
Group 1							
Industrial injury	0.15	0.15	0.16	0.22	0.32	0.43	0.44
Group 2							
Nonindustrial injury	0.13	0.09	0.09	0.10	0.15	0.13	0.0
Influenza, grip and colds	0.41	0.54	0.31	0.51	0.61	0.73	0.61
Nasal fossae and adnexa	0.04	0.01	0.01	0.01	0.02	0.02	0.0
Bronchitis	....	....	....	....	....	0.01	0.0
Pharynx and tonsils	0.03	0.05	0.04	0.01	0.09	0.06	0.04
Pneumonia	0.03	0.04	0.02	0.01	0.05	0.06	0.0
Respiratory tuberculosis	0.05	0.04	0.01	0.001	0.01	0.02	...
Other respiratory diseases	0.02	0.02	0.06	0.02	0.02	0.04	0.01
Teeth and gums	0.02	0.03	0.04	0.04	0.07	0.05	0.01
Stomach, except cancer	0.09	0.10	0.08	0.14	0.23	0.17	0.16
Diarrhea and enteritis	....	....	....	....	....	....	....
Appendicitis	0.06	0.05	0.04	0.05	0.10	0.08	0.05
Hernia	0.01	....	....	....	0.02	0.01	0.01
Other digestive diseases	0.02	0.01	0.02	0.01	0.06	0.05	0.01
Heart	0.09	0.09	0.07	0.02	0.07	0.06	0.04
Hemorrhoids	....	0.01	0.01	0.01	0.04	0.02	0.01
Other circulatory diseases	0.03	0.02	0.03	0.01	0.04	0.04	0.03
Genitourinary diseases	0.04	0.02	0.02	0.03	0.06	0.04	0.01
Neuralgia, neuritis, sciatica	....	0.02	....	....	0.01	0.01	....
Other diseases of nervous system	0.01	0.04	0.02	0.06	0.06	0.02	0.01
Organs of vision	0.01	0.02	0.02	0.01	0.02	0.02	0.01
Ear and mastoid process	0.01	0.01	....	0.01	0.01	0.01	....
Rheumatic diseases	0.04	0.03	0.06	0.06	0.16	0.07	0.10
Lumbago, myositis, etc.	0.04	0.05	0.07	0.07	0.11	0.16	0.03
Skin diseases	0.01	0.01	....	....	0.02	0.02	....
Infectious and parasitic diseases	0.05	0.03	0.02	0.03	0.03	0.07	0.0
Cancer, all sites	0.02	....	0.01	....	0.01	0.01	0.01
Group 3							
Ill defined and unknown causes	0.33	0.27	0.65	0.90	0.71	0.97	0.94
Illness or death in family	0.25	0.25	0.30	0.44	0.73	0.75	0.65
Miscellaneous personal reasons	0.29	0.33	0.78	0.96	1.50	1.79	1.34
Total	2.28	2.31	2.93	3.78	5.38	5.02	4.87

The total workable shifts on which these percentages are based:

Year	Shifts
1940	658,850
1941	703,159
1942	940,131
1943	997,321
1944	996,368
1945	944,749
1946 (26 weeks)	472,017

SICK LEAVE WITH PAY

I have been especially concerned during the last few months with the propaganda in collective bargaining negotiations throughout the country for including in union contracts a given number of days of sick leave with pay. All realize that over a period a man or his family will be sick and that he cannot work, year in and year out, 100 per cent of the operating time. The wage rates have been, and should continue to be, based on a reasonable amount of sick absenteeism If they are not high enough they should be increased. But just as soon as more than a reasonable amount of time off for sickness is allowed it is solely an indirect way of obtaining a higher rate of pay and a way which will have the direct result of increasing absenteeism and, therefore, higher operating costs. The Welfare and Retirement Fund in the bituminous coal contract created by the employers paying 5 cents per ton is just an indirect way of paying a higher hourly wage rate. Last winter when the Union Committee in our Southeast Missouri operations asked for fifteen days' sick leave with pay, I thought that it would be of interest to find out just how much time was lost through sickness. For the last six and a half years we have kept a fairly accurate record of our absenteeism, which covers absences of one or more days I would emphasize that our records are based on the employees' statements to us, and it is therefore quite probable that during the hunting and fishing seasons the absentee excuse of a cold may have been somewhat exaggerated. In any event, our sickness figures are therefore more apt to be high than low. In table 1 the detailed figures are available for any one who is interested, and in table 2 the summary figures.

TABLE 2—*Percentage of Shifts Not Worked*

Group	Reasons for Absence	1940	1941	1942	1943	1944	1945	6 Mo. 1946
1	Industrial injury.	0.15	0.15	0.16	0.22	0.32	0.43	0.44
2	Sickness	1.26	1.31	1.04	1.26	2.09	1.98	1.50
3	Personal reasons, including ill defined and unknown causes, illness or death in family. .	0.87	0.85	1.73	2.30	2.97	3.51	2.93
	Total .	2.28	2.31	2.93	3.78	5.38	5.92	4.87

Under the workmen's compensation laws employees are compensated for time lost through industrial injury, so we can eliminate this subdivision from consideration in a sickness calculation. As I do not think that an employee should be paid for time lost because of personal reasons or for illness or death in his family, we can also eliminate the third group. In the circumstances, we are interested in group 2, which shows the time lost through sickness The average for the six and a half year period is slightly less than 1.5 per cent; the time actually lost, on the basis of the employees' own statements to us, is therefore slightly less than five days a year on a six day week and less than four days on a five day week. It therefore appeared to me that the union committee was "negotiating" when fifteen days' sick leave was asked. I am confident that if sick leave with pay had been given the time lost through sickness or alleged sickness would be greater than 1.5 per cent of the shifts worked and the cost of our mining operations even higher.

In further connection with these comparative figures, some one may be interested as to why the time lost from industrial injury has risen from 0.15 per cent in 1940 to 0.44 per cent and the so-called personal reasons from 0.87 per cent to 3.51 per cent in 1945 and back to 2.93 for the first six months in 1946 We felt that accidents would unfortunately probably increase when the five day a week prewar basis was increased to six, when the younger men left for military service and their places were filled with older and more unskilled men, and when through unionization the control of management was lessened through grievance committees' procedure, and so on, as commenced in 1943. The increase in personal reasons is probably because on a six day basis a man was required to take time for family necessities, he became tired under wartime restrictions, and also because with his greatly increased weekly earnings he had sufficient money for his needs without working the full six days. The decrease in 1946 is possibly because with the return to a five day week in May the men have less take home pay even though wage rates were increased to the government pattern of 18.5 cents an hour.

TABLE 3—*Comparison of Claims Paid, Cost and the Like Between Southeast Missouri Mutual Aid Association and a Representative Insurance Company*

St. Joseph Lead Company, Southeast Missouri Division

Number of employees for mutual aid coverage, June 1, 1944:

Eligible to membership	2,674
Actual membership	2,694
Average (weighted) weekly benefit	$ 12.33
Average annual contribution	6.00
Average five year annual contributions	14,899.29
Average five year annual claims	12,131.14*

* As the only cost for services of the officers and the investigating committee is the waiving of their $6 annual contribution, there is no overhead expense. The company deducts the 50 cents per month on authorization of the employee and makes no charge for such service.

The difference between claims and contributions is retained for future claims or emergencies

Therefore the cost is approximately:

Pay in claims ..	$6.00 × 81.4 per cent	=	$4.88 per year
Overhead	.. ..		. per year
Total cost	....		$4.88 per year

Insurance Company

The following figures were submitted as being representative companies, which were somewhat similar to Southeast Missouri, as to number of employees.

Co	Date of Issue	Number Lives	Return in Last Year: Claims per Cent	Return in Last Year: Dividends, per Cent	Return in Last Year: Total, per Cent	Cumulative Return Since Issue: Claims, per Cent	Cumulative Return Since Issue: Dividends, per Cent	Cumulative Return Since Issue: Total, per Cent
1	9/ 1/36	3,357	91.25	0	91.25	72.87	9.35	82.22
2	9/20/40	2,268	88.02	0	88.02	69.96	15.95	85.91
3	9/28/40	2,765	79.50	0	79.50	77.38	2.18	79.56
4	7/ 1/36	3,109	78.67	0.61	79.28	55.40	23.22	78.62
5	12/31/29	2,486	74.86	7.89	82.75	52.51	17.56	70.07
6	11/23/42	2,197	79.20	0	29.20	104.21	0	104.21
7	4/ 5/25	3,863	127.07	0	127.07	64.56	24.72	89.28
8	12/31/27	4,070	84.22	0	84.22	62.79	24.89	87.68
9	5/ 6/40	2,303	70.08	10.18	80.26	56.57	24.94	81.51
10	4/19/26	5,633	91.65	0	91.65	56.30	26.29	82.59

In order to obtain representative weighted average figures, companies numbered 4, 5 and 6 have been eliminated as being above or below the other group figures:

	Per Cent
Average amount paid in claims	65.46
Average amount paid in dividends.	19.02
Insurance Company's handling expense .	15.52
Total premium	100.00

The insurance company offered an estimated annual gross premium of $13.80 for a weekly benefit of $11.80 for any thirteen weeks' period. The premium would be around $14.42 instead of $13.80 for a weekly benefit of $12.33 instead of $11.80 Therefore the approximate cost, after dividends, would be:

Pay in claims	$14.42 × 65.46 per cent	=	$ 9.44 per year
Retain for overhead . ..	14.42 × 15.52 per cent	=	2.24 per year
Total cost	. .. .		$11.68 per year

HEALTH AND HOSPITAL COVERAGE

Another matter that we hear discussed, and one which is becoming a factor in collective bargaining, is the taking out of health and hospital coverage. At the outset let us realize that if the employer pays all or a portion of the cost it is solely an indirect wage and salary increase. In my opinion we should bargain collectively on wages and salaries but not confuse the issue by bargaining on health matters. However, when the question came up at one of our divisions, I said that I would find out what the estimated cost would be if the coverage were taken out with an insurance company instead of the risk being carried by our men themselves, as they have been doing at some of our units for over twenty-five years. The comparison showed (table 3) that the insurance company would pay in claims $14.42 × 65.46 per cent, or $9.44 a year. Return for overhead $14.42 × 15.52 per cent, or $2.24 a year. Total cost, $11.68. Based on our detailed figures, the average amount paid out in claims was 81.4 per cent of the contributions. Therefore the annual cost for sickness coverage per employee was approximately $6 × 81.4 per cent, or $4.88 a year, in comparison with around $11.68 if the coverage was carried by the insurance company.

I feel that the insurance company's payment for claims is about 100 per cent higher than our men's cost ($9.44 in comparison with $4.88) because, since they could increase the net premiums by paying smaller dividends in the event of a poor experience record, they would be more liberal in considering a sickness claim than our men would be. Then, too, our men would be more "liberal" in making claims against an insurance company than against their fellow workmen. In my conversations with the insurance company representatives they make the rather unique statement that the cost was not $11.68 but only $2.24, which was their overhead, as our employees would receive the $9.44, which was better than the $4.88 when they carried all the risk themselves. For obvious reasons, this argument did not appeal to me.

I feel that sickness and hospital coverage can be carried cheaper by the men themselves or by their union than by an insurance company. If, however, they do not wish to assume the risk and desire a policy, they should arrange for it themselves and they should pay the entire cost. If the employer pays any portion, then men, being only human, will take advantage of the policy by "liberalizing" their claims.

CONCLUSION

The sooner labor and management confine negotiations to developing a suitable wage and salary rate structure, stop negotiating on matters that involve payment for time not worked, such as sick leave with pay, payment for liberalized sickness and hospital claims, the sooner our government stops paying subsidies that encourage inefficiency, as is now being done in the mining industry, and stops paying bonuses for not growing products and so on, the better off America and the world will be. The only way in which all can benefit is through increased production and the resultant higher standard of living through having more goods at lower cost. Unfortunately many persons and organizations in the United States are today thinking and conducting their operations on the selfish basis of "he is getting his, so I had better get mine." We should, one and all, think at times Is it for the best interests of our community and our country? and when it is then act constructively!

NEW HORIZONS IN INDUSTRIAL HEALTH AND WELFARE

LABOR AND MANAGEMENT AT THE CONFERENCE TABLE

BORIS STERN
Chief, Industrial Relations Branch, Bureau of Labor Statistics, U. S. Department of Labor
Washington, D. C.

As a fact-finding agency the Bureau of Labor Statistics of the Department of Labor does not initiate or advocate any peculiar or special plans for health or welfare provisions in collective bargaining agreements; nor do we advocate any plans in the other major field of industrial relations, such as wages and hours, seniority problems, problems of vacations with pay and a number of other things which come up for discussion at the labor management conference table. Our job is to keep in close touch with the entire development in the field of industrial relations so that when labor and management get together and ask the Department of Labor to tell them what has been the recent trend, say, in the case of health and welfare development or the case of incentive pay, we ought to be able to provide them with that information. We are also called on by the Congress of the United States to provide that information, and we feel that we have an obligation to the public at large; hence we often also publish that type of information.

Our sources are twofold. First, we maintain in Washington a substantial file of currently active collective bargaining agreements. At present we have about fifteen to sixteen thousand of such agreements on file, and they represent from one fourth to one third of the total number that are in existence in the United States. Precisely how many there are we don't know, because we get our agreements by the process of voluntary submission. We write to the unions or to the employers or to both and ask them to send us copies. If they think that we are reliable and they can trust us, they send us a copy. If, for one reason or another, they do not like us, they throw our letters in the wastepaper basket. Nevertheless we do have a substantial number of collective bargaining agreements which we use as a basis for the facts and the information needed by labor and management in collective bargaining.

When a new problem arises for which we do not have sufficient information but which is of importance to labor and to management, we send out field agents to study the problem on the spot, to find out how a particular program is being put into effect in the plant and how it affects relations between labor and management.

Now, what do we know about health and welfare programs? We know that the present method of establishing such programs through collective bargaining is an innovation and a product of the war. In 1942, when we made an analysis of union agreements for the War Labor Board, we found so few programs of that kind in operation that we did not even mention them in our report. Three years later, in 1945, we found that such a substantial number of health and welfare plans had been put into effect through collective bargaining that we deemed it necessary to publish a special report, which is number 841 of the Bureau of Labor Statistics and is entitled "Health Benefit Programs Established Through Collective Bargaining."

Last spring when the mine workers struck, primarily on the issue of whether or not they were to get a health and welfare fund, the demand for that report was such that our supply of available copies was exhausted within a few weeks. At present we are reprinting that bulletin, and to any one who is interested I shall be glad to send copies on request.

At the time when we published the report we estimated that 600,000 workers were covered by provisions in collective bargaining agreements which provide for some kind of accident or sickness insurance or life insurance, paid for either entirely by the employer or partly by the employer and partly by the union.

At present we estimate that more than a million and a quarter wage earners are covered by collective bargaining agreements which have provisions of that kind. The principal increase since last year, of course, has been in the mining industry with approximately 450,000 United Mine Workers members in the bituminous coal and anthracite mining.

Among the important industries which have special health and welfare clauses in agreements with unions are Men's Clothing, with approximately 275,000 workers; Ladies' Garments, with approximately 200,000; Textiles (all kinds), 125,000; Hats and Millinery, 20,000; Laundry, Cleaning and Dyeing, 30,000. Other industries with health and welfare programs established by collective bargaining for which we do not have precise information as to the number of workers covered are Streets and Railways, the Machinery Industry (particularly electrical machinery), Retail and Wholesale Trade, Fur and Leather, Furniture, Building Trades and Office Workers. Most of the A. F. L. and C. I. O. unions are now interested in programs of that kind.

While the establishment of health and welfare provisions through collective bargaining is thus a comparatively new phenomenon in industrial relations, there is nothing new in the concern of unions and employers with problems affecting the health and welfare of workers. In fact, most of the older unions have for some time had plans by which the union supplied such aid to their members. Many of these unions started as fraternal organizations and their objective was not only to raise wages and improve working conditions but also to supply sickness, unemployment, old age and mortuary aid to the members or their widows. In the course of time, and especially within the last decade or so, unions became aware of the fact that they were not properly equipped to do an effective job in this field. I quote from a pamphlet recently published by the A. F. of L.: "Unions have sponsored their own benefit plans for decades. Often actuarially unsound and overambitious in scope, many of these plans collapsed. At present only eighteen American Federation of Labor Internationals pay health benefits, and the amount is often pitifully small." [1]

Employers too have for some time been concerned with the welfare of their employees—some for humanitarian reasons, because they felt that they were responsible for those who worked in their employ; others, on the other hand, inaugurated welfare programs for their employees primarily to keep them from joining labor organizations. Some of these programs are still in operation, here and there, but not to a degree comparable with the health and welfare plans recently established through collective bargaining.

One who examines those plans, one after the other, will be amazed at the large variety in terms of what they provide for, such as life insurance, sickness benefits, accident benefits, hospitalization and the like. There is also a large variation in the way the plans are put into effect and as to how much money is being contributed to keep them going. There is a large variation as to who administers the program. We regard these variations as extremely worth while because we hope that in the course of time and by the process of experimentation those plans which are not workable and those plans which have been built on unsound ground will disappear and give way to one or several plans which may prove most effective in a particular industry.

There is more involved in the present trend than merely health and welfare programs. Only last week I had an opportunity to examine two new contracts. One was between the Brotherhood of Electrical Workers of the A. F. of L. and the Electrical Contractors' industry. They now have a provision for retirement benefits to the 100,000 electrical workers employed in that industry paid for partly by the union and partly by a payroll tax on the employers. There we have an attempt to take care of the older workers, who, when they reach the age of 65, are no longer in a position to compete with the younger men.

Another agreement, that of the International Ladies' Garment Workers in Philadelphia, provides for payments by the employers to a fund out of which the workers will receive what they call "job security" benefits. The clothing industry is highly seasonal and, time and again, workers find themselves out of a job. In setting up the fund, management and the union inserted another clause which states that it is the objective of labor and of management in that industry to see to it that the workers who now are employed sometimes only eight months or less in the course of the year are to be protected through employment or through benefit payments so that they can live decently throughout the 365 days of each year. In this one sees the beginning of what is now known as the guaranteed annual wage or the guaranteed annual employment.

We in the Department of Labor therefore feel that the new trend of labor and management getting together at the conference table to agree on what is to be done to improve the health and the welfare of the workers constitutes a step in the right direction. Out of the large variety of programs and welfare plans included in collective bargaining agreements there is bound to evolve one or several plans which will prove the most adapted to the needs of the workers concerned and at the same time not too costly for industry and the consumers to bear the burden. Labor has tried to develop a program of its own but has not been entirely successful; management too has tried to protect the health and welfare of its employees through programs initiated entirely by management, but these also have not been successful. It is only when labor and management join forces and cooperatively, with or without the aid of the government, tackle the problem that we can expect real accomplishments.

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[1] Health Benefit Plans by Collective Bargaining, published by American Federation of Labor May 25, 1946.

ABSTRACT OF DISCUSSION

ON PAPERS OF BOONE, FLETCHER AND STERN

Mr. Boris Stern, Washington, D. C.: My remarks about collective bargaining dealt with what exists in the country and dealt with collective bargaining agreements that we have in the files of the Department of Labor and which we have analyzed. I did not state that certain things should be included in collective bargaining agreements or finally on the problem of whether or not a fund allocated for sickness benefits or for health benefits or for old age benefits is the same thing as an increase in the wages and, as Mr. Fletcher indicated, should be given in the form of wages. I have a feeling that the average worker has not yet been educated sufficiently to be able to invest his wages in that kind of insurance. Therefore, if it is the same thing—if the money is to be expended and we merely have a choice whether it is to be given to the individual worker in the form of a wage increase or whether it is to be given to an insurance company in the form of a future protection of the worker, his children and his family, I—and this is not the position of the Department of Labor, as I am expressing my feeling in the matter—feel that the money invested in the protection in insurance is a much better investment than an increase in the wages or salary structure.

Rear Admiral Joel T. Boone (MC), U.S.N.: I want to make it clear that our group is a fact finding group. We have nothing to do with other groups. In other words, we are making a diagnosis and a prescription; whether it will be taken to a drug store or interpreted by a Christian scientist, I wouldn't know. But we are absolutely impartial. We have no ax to grind, and we have no preconceived ideas. We are naval officers assigned to a job, assigned to a ship at a foreign station. When the job is completed we shall make our report. We shall salute and return to our stations. Now I should like to say, in explanation of the 5 cents a ton regarding the fund for retirement and welfare, that that is a tax on the ton, but the Wage Stabilization Board granted an increase to the operators of the coal. I have often wondered what the definition of "welfare" is. I should be very happy if it is defined and the limitations given to me as to its application.

Chairman Sawyer: Ladies and gentlemen, have we a few questions?

Question: I should like to have Admiral Boone repeat where the money comes from in the two funds and who administers the two funds.

Admiral Boone: The money for the retirement and welfare fund comes from the 5 cents royalty on a ton of coal. The trusteeship is set up for that and it is composed of a member appointed by the union, one by the management, or the United States government, and they select the third member. The second fund is the medical care and hospital fund, and the money for that comes from voluntary pay envelop deductions of the miners and it goes to the trusteeship appointed by the mine workers. The first fund has been accumulating since the 15th of August, and it is being held in escrow in the custody of the paymaster general of the Navy in a New York bank. No trustees have been appointed to date. The government has the mines under operation and for the time being it has been agreed to accumulate the fund and not to appoint the trustees. As to the second fund, Mr. Lewis promised, at my request at the beginning of the survey, that nothing would be done about it until the survey was completed. In other words, the operators were ready to pull out of their medical care and hospital groups, feeling that it was in Mr. Lewis's hands now. There is a fine medical service and hospital program being carried out, and the miners and their families would be left desperate without it. So that until the survey is completed, no action can be taken by that fund. The two funds are to be correlated under the trusteeships.

Question: Is this bituminous agreement going to set standards for the future in other industries?

Mr. Stein: I cannot answer the question about the future. The trend is in the direction of labor and management getting together and by agreement setting up some kind of program which will on the one hand satisfy the needs of the workers and on the other hand be not so costly so that industry could afford to pay it. Whether it will take the form of the fund that has been established for the miners it is hard to say; whether it will be the form of the fund being accumulated by the Garment Workers it is hard to say. Nobody can tell. It may be that half a dozen of those programs will develop in the course of time.

BLAST INJURY

CAPTAIN R. HAROLD DRAEGER (MC), U.S.N.
JOSEPH S. BARR, M.D.
and
W. W. SAGER, M.D.
Bethesda, Md.

The detonation of a high explosive in the vicinity of the human body may result in various injuries, depending on which of the three states of matter, gas, liquid or solid, effectively transmits the force of the explosion.

The effects of an explosion in air and water have been described in medical literature in considerable detail.[1] Recently a new clinical entity, solid blast,[2] has been described, in which the force of an explosion is harmfully transmitted to the human body through solid structure.

This paper is concerned with a comparative study of the three types of blast injury—air blast, water blast and solid blast. The physical forces, mechanism, pathology, clinical features, prevention and treatment of such injuries are briefly considered.

NOMENCLATURE

Blast injury is an acceptable generic term for the various harmful effects of an explosion on the human body. Air blast, water blast and solid blast may conveniently designate the three types of blast injury. The word blast relates to the causative explosion; the terms air, water and solid denote the material medium which harmfully transmits the explosive force. Each of these three types produces various effects, which, broadly considered, include all the injuries which may be inflicted by the detonation of a high explosive.

The medical literature contains a variety of terms which have been applied to blast injuries. Wind of shot,[3] reflex paralysis,[4] bomb blast, shell shock, concussion and other terms have been used to designate the effects of an explosion in air. Underwater concussion, submarine blast and immersion blast have been used to indicate the effects of underwater explosion on immersed persons. Likewise the names deck slap, deck

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From the Naval Medical Research Institute and U. S. Naval Hospital, National Naval Medical Center, Bethesda, Md.

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heave and destroyer heel have been used to designate the effects of the acceleration of a deck structure caused by an explosion in the proximity of a ship. This confused terminology is simply resolved by the use of the terms air blast, water blast and solid blast.

AIR BLAST

The detonation of a high explosive in air results initially in an extremely rapid outward movement at supersonic speeds of hot gases generated by the chemical reaction of the explosive. An air compression wave is thus produced which travels outward at sonic speed (about 1,100 feet per second). Such an air pressure wave subjects everything in its path first to an outward thrust as the wave front strikes the object, then to compression as it is enveloped by the wave, and finally to a minor wave of negative pressure. The effects of an air pressure wave are apt to be erratic, owing to the alteration of pressure by reflection resulting in cancellation by interference or augmentation by reinforcement.

An explosion is also associated with the liberation of a large amount of energy in the form of heat. This is dissipated in part as radiant energy (light and heat) and largely by the outward movement of hot gases. The thermal effect, although of only a few milliseconds duration, may cause serious "flash burns," particularly of the exposed portions of the body.

The energy of an explosion is also transmitted to neighboring objects, moving them outward with great velocity. From the standpoint of trauma to the human body, secondary injuries from flying débris and metal fragments and from the person being thrown against fixed objects are most important.

It is unnecessary in this paper to discuss wounds, cuts, contusions and thermal injuries such as flash burns. Such injuries are common, easily recognized and clinically well understood.

The pressure wave of an explosion in air produces certain interesting and important primary effects on the human body. Chief among these is pulmonary blast injury. The severity of pulmonary injury more nearly determines the fate of the individual than any other primary injury caused by air blast. Damage to the lungs interferes with respiration and produces shock.

The respiratory symptoms and signs are embarrassment of breathing, cyanosis, pallor, restlessness and frank hemoptysis or blood streaking of the sputum.[5] Pain in the chest is a constant symptom and is of two types. There may be pain felt centrally, deep in the chest, due to mediastinal hemorrhage or emphysema. There is also in the majority of the cases lateral pain due to pleural and chest wall injury, made worse by respiratory movements.[6] Respirations may be either rapid or slow. Barrow and Rhoades described the respiration of their patients as slow, shallow and sighing, except when severe pain was present, and then the patients gasped for breath. Cyanosis, the result of deficient aeration, occurred in many instances within an hour or more after the injury. Cough has been noted and may last several days.[7] Burbank and Forsee[8] describe a ballooning of the lower part of the chest as the most characteristic finding on physical examination. In uncomplicated cases the resonance on percussion is normal. Breath sounds are weak, and coarse bronchial rales may be heard on auscultation.[9]

At autopsy in fatal cases the findings vary in severity.[10] The lung may contain various amounts of extravasated blood. Lockwood[11] in describing the injuries to the lungs in World War I stated that rupture of the visceral pleura or a complete collapse of the lungs occurred in severe cases. The alveoli may contain blood from a tear in the interalveolar septum or from lacerations along the lines of the ribs. Red hepatization may occur.[12] As would be expected on x-ray examination, various areas of increased density are visible.[13] The bases, rather than the apexes, are the areas where x-ray changes are usually seen.

Abdominal pain, which is characteristic of water blast, is infrequent in air blast, but sometimes it and rigidity are predominant features. In an occasional case these symptoms are so prominent that a laparotomy appears to be imperative, but as a rule on exploration only punctate subserosal hemorrhages are found.[14] The abdominal pain in some instances may be referred from the chest, or rarely it may result from abdominal visceral injury.[15]

A striking clinical feature is the effect of air blast on the central nervous system. The prominence and ease of recognition of the symptoms attributable to lesions of the central nervous system caused overemphasis of this feature during the first world war. Since that time a clearer conception of the nature of these injuries and their relationship to the symptoms found in cases of air blast has been attained.[16]

Those whose symptoms are purely psychogenic and have no organic basis are apprehensive, lose weight, eat poorly, do not sleep well and have terrifying dreams. The symptoms of those suffering from organic brain damage are lethargy, slow cerebration and lack of interest. They are not apprehensive, sleep more than normal rather than less, usually gain weight and have a normal appetite.[17] The degree of lethargy, according to O'Reilly and Gloyne, is indicative of the severity of the injury.[18] It is thought to be the result of petechial hemorrhages in the central nervous system.

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5. Clute, K. F.: Blast Injuries of the Thorax and Abdomen, Univ. Toronto M. J. **22**: 147-155 (Feb.) 1945. Palma, J.: Blast Injury of the Lungs with Comment on Immersion Blast Injury, Hawaiian M. J. **2**: 42-47 (Sept.-Oct.) 1942. Bohrer and Lester.[1]

6. O'Reilly, J. N., and Gloyne, S. R.: Differential Diagnosis of Lung Injuries, Lancet **2**: 423-428 (Oct. 11) 1941. Dean and Thomas.[9]

7. Barrow, D. W., and Rhoads, H. T.: Blast Concussion, J. A. M. A. **125**: 900-902 (July 9) 1944.

8. Burbank, B., and Forsee, J. H.: Bomb Blast Injuries, Mil. Surgeon **93**: 124-132 (Aug.) 1943. Clute.[5]

9. Dean, D. M., and Thomas, A. R.: Effects of High Explosive Blast on the Lungs, Lancet **2**: 224-226 (Aug. 24) 1940. Palma.[5]

10. Falla, S. T.: Effect of Explosion Blast on the Lungs: Report of Case, Brit. M. J. **2**: 255-256 (Aug. 24) 1940. Zuckerman, S.: Experimental Study of Blast Injuries to the Lungs, Lancet **2**: 219-224 (Aug. 24) 1940; in discussion.[12] Hadfield.[12] Greaves, Draeger, Brines, Shaver and Carey.[15] Dickson.[3]

11. Lockwood, A. L.: Some Experiences in the Last War, Brit. M. J. **1**: 357-358 (March 2) 1940.

12. Hadfield, G., in Discussion on the Problem of Blast Injuries, ibid. **34**: 171-192 (Jan.) 1941. Barrow and Rhoads.[7] Zuckerman.[20]

13. Barrow and Rhoads.[7] Burbank and Forsee.[8]

14. O'Reilly and Gloyne.[6]

15. Greaves, F. C.; Draeger, R. H.; Brines, O. A.; Shaver, J. S., and Carey, E. L.: An Experimental Study of Underwater Concussion, U. S. Nav. M. Bull. **41**: 339-352 (March) 1943.

16. Ascroft, P. B.: Blast Injury of the Lungs with a Curious Lesion of the Cerebrum, Lancet **1**: 234-235 (Feb. 20) 1943. McKibben, P. S.: A Note on Intravascular Fat in Relation to the Experimental Study of Fat Embolism in Shell Shock, Am. J. Physiol. **48**: 331-359 (April) 1919. Robb-Smith, A. H. T.: Pulmonary Fat Embolism, Lancet **1**: 135-150 (Feb. 1) 1941. Krohn, P. L.: Blast Injuty to Lung, Brit. M. J. **1**: 645-646 (April 26) 1941. Mogena, H. G.: Hemorragia interna por onda de explosion, Semana méd. españ. **1**: 111-112 (Sept. 24) 1938. Crichton-Miller.[18] Mitchell.[4] Krohn, Whitteridge and Zuckerman.[1] Dickson.[3] Hooker.[23] O'Reilly and Gloyne.[6]

17. Pugh, H. L.: Blast Injuries, S. Clin. North America **23**: 1589-1602 (Dec.) 1943.

18. Crichton-Miller, H.: Somatic Factors Conditioning Air Raid Reactions, Lancet **2**: 31-34 (July 12) 1941.

Abbott, Due and Nosik[19] called attention to cases of subdural hematoma and effusion in which there was a history of severe concussion and loss of consciousness for periods varying from a few minutes to several days. There were persistent headaches, loss of memory and irritability. Rarely were positive neurologic signs present, and those that were present were not pronounced. The most common findings were a slight facial palsy, a transient hemiparesis and occasionally a transient change in reflexes. Without careful study these patients would be discharged from the military service as chronic invalids with a diagnosis of a functional disorder.

Zuckerman reported in 1941 that, in experimental animals exposed to high air blast pressures, pial and ventricular hemorrhages occurred. Hemorrhages, especially in the thoracic cord, were found about the spinal roots.[20] The work of Denny-Brown and Russell[21] on cerebral concussion is of interest in that they called attention to concussion produced by the acceleration of the head.

Injury to the ears has been described by many authors, and in some cases ear lesions are of diagnostic significance.[22] Tinnitus, deafness and pain referred to the ears were almost universal immediately after the explosion. The most severe immediate deafness was associated with hemotympanum rather than with perforation. In patients with actual hemorrhage into the ear drum, usually in the region of the umbo and the handle of the malleolus, there was almost complete deafness. Recovery of this group was rapid, with but little impairment of hearing after two weeks. Perforation of the ear drums, varying in size from a complete loss of the entire membrane and ossicles to small slits, occurs frequently in air blast. There is no apparent relationship between loss of hearing and the size of the perforation.

Ocular symptoms and signs may occur; a sensation of grit in the eyes, photophobia, blepharitis and lacrimation are the most usual. Three cases of subconjunctival hemorrhage and 1 of clouding of the corneal epithelium occurred in Barrows and Rhoads's[7] cases. Blindness as a result of air blast is rare.

Shock is present in all cases of air blast injury. Electrocardiographic study of a series of cases showed a flattened QRS complex and a normal sinus rhythm.[7] No arrhythmia or fibrillation was found. A subnormal temperature on admission to the hospital was followed by a slight rise four to twelve hours later.[7] Hooker[23] experimentally produced in animals a sudden drop in arterial pressure to approximately one half of normal, a condition he describes as "primary shock." His animals showed pulmonary damage at autopsy. Pugh[17] called attention to the large vascular bed found in the lungs, which, when injured, afforded a sufficient etiologic factor for the production of shock. It must also be remembered that usually the entire body is exposed to the effect of the blast; many undiscovered lesions may aid in the production of shock. Abbott, Due and Nosik[19] state that examination of the fatal cases at autopsy reveals multiple hemorrhages throughout the body. As would be expected, lesions of other organs have been reported, but these occur in isolated instances.[20]

Treatment of air blast is the treatment of shock and of such other lesions as may be present. Lockwood[11] advised that these cases should be sought among those lying about close to the site of an exploded shell or bomb. Oxygen therapy is generally accepted as being of great value and should be started at the earliest possible time. Bed rest and a minimum of transportation and handling are of utmost importance. Plasma and other intravenous fluids should be given carefully, owing to the danger of increasing the amount of pulmonary hemorrhage.

WATER BLAST

The detonation of a high explosive in water also results initially in an extremely rapid outward movement of hot gases, generated by the chemical reaction of the explosive. A water pressure wave is thus produced which travels outward at sonic speed (about 4,800 feet per second). Immersed persons traversed by such a pressure wave and subjected to forces of compression greater than 500 pounds per square inch are apt to sustain fatal injuries from rupture of the intestine or of pulmonary vessels.[24] Corey[25] states that an underwater blast pressure of over 250 pounds per square inch will result in intestinal perforations and that even lower pressures must be looked on as dangerous.

Since the human body has a density approximately equal to that of water, it is traversed by the water pressure wave and only the air-containing portions of the body are subjected to sudden compression and reexpansion. This causes rupture of tissues adjacent to the contained air, chiefly the lungs and intestine. The head usually escapes damage, as it is held out of water.

Secondary injuries in water blast are much less frequent than in air blast, owing to the restraining effect of water on metal fragments and wreckage. However, because of its greater density, water will harmfully transmit the primary pressure wave for a much greater distance than air. Flash burn effects are inconsequential in water blast.

Water blast was recognized in World War I, but it has been only in the recent war that a careful study of this phenomenon has been made. Mathew[26] of the Royal Navy described 10 cases in 1917. In 1940 Atkins[27] described 3 cases which occurred during the evacuation of Dunkirk. Breden, d'Abreu and King[28] reported cases resulting from the explosion of torpedo and depth charges. Greaves and Draeger[15] and Friedell and Ecklund[29] have published experimental work. Many other studies of value have been made. At present our knowledge of this form of blast injury is equal to that of air blast.

The sensation of having received a "quick punch" in the abdomen, or a feeling of compression of the chest and abdomen, is complained of by survivors. In some cases there is only mild discomfort after this initial sensation, in other instances the abdominal pain within thirty minutes becomes very severe. Later, frequent bloody stools may be passed. If there has been a perforation of the bowel, evidence of peritonitis will develop and a paralytic ileus may manifest itself.

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[19] Abbott W D, Due, F O, and Nosik, W A Subdural Hematoma and Effusion as a Result of Blast Injuries, J A M A **121:** 664 666 (Feb 27) 1943

[20] Zuckerman, S, in *Discussion on the Problem of Blast Injuries*, Proc Roy Soc Med **34:** 171 192 (Jan) 1941

[21] Denny Brown, D, and Russell, W R Experimental Cerebral Concussion, J Physiol **99:** 153 (Dec 20) 1940

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[23] Hooker, D R *Physiological Effects of Air Concussion*, Am J. Physiol **67:** 219 274 (Jan) 1924

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[25] Corey, E L Medical Aspects of Blast, U S Nav M Bull **46:** 623-651 (May) 1946

[26] Mathew, W E Notes on the Effects *Produced by a Submarine* Mine Explosion, J Roy Nav M Serv **3:** 108 109 (Aug) 1916

[27] Atkins, H J B Lessons from Dover, Guy's Hosp Gaz **54:** 192 195 (June 29) 1940

[28] Breden, N. P, d'Abreu, A L, and King, D P Sudden Compression Injuries *of* the Abdomen at Sea, *Brit M J* **1:** *144 146* (Jan 31) 1942

[29] Friedell, M T, and Ecklund, A M · *Experimental Blast Injury*, U S Nav M Bull **41:** *353 363* (March) 1943.

The abdomen may become rigid as a result of perforation of the intestine, from subserous hemorrhage of the intestine or from referred pain from the chest when there is associated chest injury. Shock is present in all cases, as described in air blast.

The abdominal pathologic changes consist largely of lesions of the gastrointestinal tract.[30] Hemorrhagic lesions, varying in size and shape, may occur in every part of the tract from the stomach to the rectum. Considerable edema of the bowel may be present. Perforations may be found at points where the bowel contains perceptible amounts of gas.[31]

Injury to the chest is less frequent than in air blast; when it does occur, the symptoms and pathologic changes are similar to those of air blast. The cranium is least frequently injured because it is not often immersed at the time of the explosion. When injury is suffered, the symptoms and pathologic changes are similar to those of air blast.

The patients should be carefully watched, treated for shock and kept on bed rest. Handling and transportation should be avoided as much as possible. Sufficient fluids, including plasma and whole blood, to maintain fluid and electrolytic balance should be given. A Miller-Abbott tube should be used in cases of paralytic ileus. Sufficient sedation should be given to relieve pain and apprehension. Considerable difficulty may be experienced in determining the necessity for surgery, which is always indicated in perforation of the intestine. Decision in this, however, must of necessity depend on the judgment of the individual surgeon.

SOLID BLAST

The detonation of a high explosive in the proximity of a semirigid body, such as a ship or a tank, results in the transmission of energy through the solid structure as a flexion wave, resulting in a sudden acceleration of deck and bulkhead surfaces.

These sudden accelerations are capable of causing serious injuries to personnel. Since this type of injury is caused by a sudden acceleration, the damage is greatest at the point of contact. Injuries of the lower extremities, particularly the ankles, are therefore most common. Secondary injury due to the victim being thrown against the overhead or, in the case of ships, overboard is also frequent.

The pathologic changes in the human body produced by solid blast bear little resemblance to those of air or water blast. The primary injury is predominantly skeletal and vascular, chiefly affecting the lower extremities. We[2] have presented elsewhere a detailed study of the injuries which occurred in 50 cases in which the effects of solid blast were studied.

Injuries involving the ankle and tarsal bones are most common and characteristic. These injuries are usually compound comminuted fractures involving the os calcis, astragalus and the distal tibia and fibula. In 36 per cent of our cases such injuries were suffered. Less frequent injuries are fractures of both bones of the leg (18 per cent). About one half of these are compound fractures.

Fractures of the tibial condyles, involving the knee joint, occur in about one fourth of the cases and are rarely, if ever, compound.

Dislocation of the knee, with or without associated fracture, is a frequent and extremely serious injury (20 per cent of the cases). Irreparable vascular damage necessitating amputation occurs in the majority of the dislocations. Peroneal nerve damage, resulting in foot drop, is associated with dislocation of the knee in a few instances.

Fractures of the femoral condyles and of the shaft of the femur, hip and pelvis are rarely seen in solid blast injury. On the other hand, fractures of the spine occur quite frequently (18 per cent of the cases); in about half of them there is associated cord or cauda equina damage resulting in partial or complete paraplegia. Fractures of the skull, face and upper extremities occur infrequently.

Cartilaginous aseptic necrosis of the ankle, knee and hip occurs frequently as a result of trauma to the articular cartilage of these joints and may be present without fracture or infection. This cartilaginous damage results in partial or complete loss of motion of the involved joints in many instances.

Soft tissue wounds associated with compound fractures occur in about 30 per cent of the cases and are usually caused by penetration of bone fragments from within outward. In addition to these wounds, severe ecchymosis and contusion about the ankles is frequently observed.

Vascular injury associated with dislocation and fracture of the knee occurs often in the form of rupture or thrombosis of the popliteal vessels. This is a serious injury, and the ensuing gangrene often necessitates amputation. Damage to the contents of the thorax and abdomen has not been seen as the result of solid blast.

Cerebral concussion as evidenced by transitory loss of consciousness occurs in about two thirds of the cases. Paraplegia of some degree is present in about half of the cases of fracture of the spine.

Exact figures on mortality and morbidity rates among persons subjected to solid blast are not available, but examination of the casualty figures reveals that among ship's personnel the probability of being killed or injured aboard a small ship or a craft subjected to mine or torpedo explosion appears to be approximately one third of the crew killed, one third injured and one third uninjured. Many victims close to the explosion are killed immediately or die within a very short time, presumably as the result of cerebral injury or as a result of drowning while unconscious. Those who survive the immediate effects of the blast may succumb later from shock or paraplegia. One patient on whom postmortem findings are available died seven days after injury. The chief findings were hypostatic congestion of both lungs, cloudy swelling of both kidneys, free fluid in the pericardial and pleural cavities, multiple fractures, a compound dislocation of the right knee and gangrene of both lower extremities. The cause of death was recorded as shock resulting in renal failure and uremia.

Most cases of solid blast injury have occurred as the result of maritime disasters in which ships were blown up or severely damaged. "On the spot" clinical recorded observation of these patients is scarce, as skilled medical care and adequate equipment are rarely available immediately. Surviving victims exhibit a variety of clinical signs and symptoms. Approximately one half or more are unconscious or dazed as the result of cerebral concussion, and most of the victims exhibit classic signs of shock. Almost all the severely injured have bilateral fractures of the lower extremities, and about half of them are compound. Swelling of the soft tissue of the ankles and lower part of the legs occurs rapidly and develops to such a degree that it prevents effective manipulative reduction of the fractures. Patients who have fractures and dislocations of the knees almost inevitably develop gangrene of the feet and lower part of the legs, with the usual clinical findings of cold, livid skin and absence of pulsation of the vessels.

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[30] Yaguda, A.: Pathology of Immersion Blast Injury, U. S. Nav. M. Bull. **44**: 232-240 (Feb.) 1945. Clark, S. L., and Ward, J. W.: The Effects of Rapid Compression Waves on Animals Submerged in Water, Surg., Gynec. & Obst. **77**: 403-412 (Oct.) 1943.

[31] McMullin, J. J. A.: Foreword to Symposium on Immersion Blast, U. S. Nav. M. Bull. **41**: 1-31 (Jan.) 1943.

Personnel who happen to be sitting down when subjected to solid blast have the shock wave transmitted directly through the pelvis and are most likely to receive fractures of the spine. Such spinal fractures are practically all in the dorsolumbar area; in about half the cases there is associated paraplegia. Personnel standing at the time of the explosion may be tossed against the overhead or fall back against the deck after being thrown into the air with such force that secondary fractures of the spine are produced.

As most solid blast injuries are the result of a major maritime disaster in which a ship is blown up or severely damaged, the patients receive a minimum of medical care during the first hours after injury. Attention is directed primarily to rescue and resuscitation from immersion, treatment of shock, simple splinting of fractures, dressing of wounds and transportation to a place where adequate medical care is available. The surgeon's first duty is to assess the general condition of the patient and to combat shock, if it is present, by administration of fluids, transfusion, complete bed rest and sedatives. The next is a complete physical examination, supplemented by the necessary x-rays, in order to determine the exact type and degree of injury. The injuries are almost always multiple, and many of them will be overlooked if the examination is not thorough. The exact treatment depends on many factors, including the type and severity of injury, the condition of the patient, the time elapsed since injury, and the judgment and skill of the surgeon, but certain general principles are applicable:

Soft tissue wounds should receive early attention. If they are not obviously infected, devitalized tissue should be excised and adequate drainage insured by lightly packing the wound. Systemic chemotherapy should be instituted. Primary closure of these wounds is usually not feasible because of the severe trauma to the surrounding soft tissues, although delayed closure may occasionally be possible. Fractures about the ankle and of both bones of the leg, which are often present, are usually severely comminuted, crushed, displaced and accompanied with extreme swelling of the soft tissue. As a result, anatomic reduction is rarely possible. The most successful method of dealing with such fractures appears to be by manipulation and molding of the fragments. Shortening should be reduced and impaction broken up by preliminary traction, preferably by means of a Kirschner wire through the os calcis. After reduction, the leg should be immobilized in a carefully molded plaster cast. The Kirschner wire should be removed within a week or two, as there is little or no tendency for overriding to occur in these comminuted fractures. Open reduction by operative means, and the use of external skeletal fixation by multiple pins, greatly increases the chances of sepsis occurring, and are rarely, if ever, indicated.

When there are fractures and dislocations of the knee joint the displaced bones must be reduced as soon as possible; the circulation of the limb must be carefully watched for impairment. The leg should be slightly elevated and immobilized in a bivalved plaster cast. Procaine lumbar sympathetic block should be used repeatedly in every case of impending gangrene. In spite of these measures, an open flap or guillotine amputation will frequently be necessary because of gangrene.

The great variety of secondary fractures and miscellaneous injuries present no special difficulties and should be managed in the usual fashion.

The rehabilitation of these cases, after the acute phase of convalescence is over, demands a combination of surgical, physical, occupational and psycho-therapy.

Open wounds and draining sinuses from compound fractures are eradicated by carefully planned surgery, if they do not heal spontaneously in a reasonable time. Operative treatment includes eradication of the sinus tract and removal of sequestrums. In a few instances a large bony defect has been packed with dried plasma and penicillin powder (1 Gm. of powdered plasma to 200 units of penicillin). The soft tissues and skin are then closed by plastic procedure or the operative defect is allowed to granulate in.

Physical therapy is necessary in all cases to restore joint function and muscular strength. Weight bearing, even with crutches and properly fitted shoes, is at first very difficult and painful. However, in spite of extremely severe injuries involving the weight bearing joints, many of these patients eventually develop surprisingly good function. Operative intervention should usually be deferred until its necessity has been completely demonstrated by the test of use.

Among the late operative procedures which may be necessary are (*a*) lumbar ganglionectomy to improve the circulation in the lower extremity; (*b*) removal of irregular bone spurs and displaced fragments which lie in the soft tissues of the sole of the foot, lateral incisions for their removal being preferable; (*c*) stabilization of the foot by some type of triple arthrodesis; (*d*) fusion of the ankle or knee joint; (*e*) ligamentous repair of the knee; (*f*) amputation of useless extremities.

PROTECTIVE MEASURES

The protection of the human body against the effects of an explosion depends on preventing a harmful amount of energy from reaching the body. This can be accomplished by a device which breaks the continuity of the medium through which the energy is being transmitted.

The only effective protection against air blast is the interposition of solid material which absorbs or deflects the hot gases, the blast wave and the flying fragments. An air raid shelter or fox hole are examples of this type of protection. Personal protective devices (special clothing and antiflak vests) have been devised for protection against flash burns and flying fragments. Ear defenders will prevent perforation of the ear drums, but there is no practical personal device which is effective in shielding the chest and abdomen from the air pressure wave.

Protection against water blast is readily obtained by interposing a layer of cellular air-containing compressible material between the air containing portion of the body (chest and abdomen) and the surrounding water. A kapok life preserver 1 to 2 inches thick gives protection against many times the lethal wave pressure of 500 pounds per square inch, provided the chest and abdomen are completely covered and the head is out of water. A device of this size is too cumbersome to be practical. However, many lives have been saved through a better understanding of the nature of water blast injury and the observance of certain safety precautions. Wearing a properly fitted life jacket,[32] swimming away from a sinking ship or other source of likely underwater explosion and getting as much of the body out of the water as soon as possible are practical measures.

Protection against solid blast may be accomplished by interposing a deformable collapsible medium between the solid surface and the human body at the point of contact. Antiblast mats and shoes constructed to support normal body weight, but which collapse under increased pressure, will afford a considerable degree of protection.

ABSTRACT OF DISCUSSION

Dr. William F. Holcomb, Oakland, Calif.: The presentation of this paper on blast injury is a distinct contribution to the medical record of the war. The first hand knowledge of these pathologic conditions has been splendidly summarized and a simplified terminology proposed. This valuable record will serve as a summary and an account for the use of future historians. When the term blast injury comes to my mind it is always associated with masses of patients being dirty. Those that are affected with air blasts are dirty and torn from the effects of dirt being driven into the body with explosive force. They are often also covered with fuel oil, which certainly is the most prominent feature of those that are involved in water blasts. The dirty and disheveled appearance of those persons who are in compartments where solid blasts have been produced is most striking. In U. S. Mobile Hospital number 2 most of our time was spent in cleaning up the patient for further transfer. This was probably a valuable occupation, for it kept us busy from producing harm by heroic treatment. The description of the kinds and characters of fractures received from various types of injury is excellent. Fractures of the metatarsal heads were not particularly mentioned but appeared to be rather common in those cases which we received in Hawaii. Why the metatarsal head should be broken just at the base and set up on top of the shaft I cannot say, but a number of cases of that type were seen in which all five metatarsal heads were completely and cleanly broken at their base and were displaced approximately the width of the head. It is difficult to explain why or how so much damage can be done to the ankle, foot and leg, as well as to the knee, without having a fracture of the femur, either in the condyles or on the shaft. I saw only one fracture of the femur, associated with other signs of blast injury, in a fatal case occurring off Balikpapen, Borneo. I believe that the description which the authors have given of the initial difficulties in diagnosis might be augmented. In the sinking of the *Yorktown* and the *Hammann* there were cases in which an air blast from a falling bomb, a solid blast from the ship's explosion and a water blast from the detonation of the depth charges of a sinking destroyer were received. These persons presented problems in diagnosis and treatment which were extremely complicated and were probably often poorly evaluated. One junior medical officer started from the scene of the battle of Midway with 125 men coughing blood from the effects of their water blast, many of them passing blood by rectum and all of them suffering from shock and immersion. The heroic work and self sacrifice of these destroyer medical officers will long be remembered by those who received their treatment or knew of their efforts.

Dr. Stephen Holstein, New York: I had the poor fortune of having the largest accumulation of cases that the Navy had right after D day, and I was interested in exactly this injury. I wondered if anybody had done any investigation on the results of this direct thrust of solid blast. I called the injury "concussive injury sustained aboard light craft." I found that the shafts of the long bones were not involved. The femur was involved not at all in our investigations, the tibia in 1 case. The first point of contact was in the os calcis or the os tragicus, the second in the knee, the third within an inch or an inch and a half of the ankle. By careful questioning it was easy to determine exactly what the injury was before the x-ray film came back. If the patient was solid on the deck and the thrust was a direct thrust, if he was on a destroyer escort—which is a light vessel—and the thrust was directly upward, one could be certain that he had an os calcis fracture and nothing else. If, however, the thrust caused the craft to skip a little along the water, the injury was on the knee. If the thrust was upward and out, the injury was at the ankle about an inch above the articulation with the astragalus. The question I should like to ask is this: With the shoe devised as the result of the experiments, I can readily see how a direct upward thrust of the deck aboard a light or moderately heavy ship can be overcome. Were any experiments conducted on direct lateral or lateral and upward thrusts in the course of the work done?

Dr. Joseph S. Barr, Boston: I had anticipated there would be criticism of the term "solid blast." It does not fall on the ear immediately as something that one recognizes as to its connotation. We went over all the variations of suggested terms and finally fell back on the subterfuge of coining one. If we are going to have such a clinical entity as air blast and as water blast, it is fairly obvious that with the force transmitted through solid material "solid blast" might be an acceptable term. The patient does not have to be standing in order to get a solid blast injury. A number of our patients were sitting. Those patients sustained fracture of the spine. They were the ones who sustained paraplegia. One patient was lying in his bunk at night with his feet against a steel bulkhead, and he sustained fractures of both os calces, so it is not necessary to be either standing or sitting. Though the bed or bunk is quite a satisfactory protective device, it does not prove to be 100 per cent protective. In the 50 cases which we analyzed carefully and which I myself saw, none presented what we felt were primary fractures of the metatarsal heads due to solid blast. One or two had secondary injuries. They had been tossed such distances that on landing they had sustained injury to the metatarsal heads. Perhaps fracture of the metatarsal heads can occur as a result of primary solid blast, but it is probably extremely rare. Fracture of the femur in our experience was the same as that of the two discussers; it rarely occurred as a primary effect of solid blast. As to experiments on lateral thrust, I am not a physicist and am not able to discuss that. This problem is still being worked on in the Navy. We discussed that possibility at great length with physicists of note, and they have felt that lateral accelerating forces could scarcely be imparted to the human body from the ship. If one is standing vertically and there is a lateral thrust, the knee might possibly be strained, but that lateral thrust did not account for the dislocations to the knee that we saw. Probably the individual variations in anatomic strength of various areas may account for the differences in the types of fracture. In one person the os calcis will be fractured, in another the lower end of the tibia will be fractured. Position has something to do with it. Those who happened to be standing with their knees slightly flexed may have sustained dislocations of the knee in one direction, whereas if they were standing with the knees hyperextended they might have sustained a dislocation in another direction. These are hypothetical answers to the question, and we must await further experimental evidence before we are didactic about it.

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[32] Palma, J., and Uldall, J. J.: Immersion Blast Injuries, U. S. Nav. M. Bull. 41: 3-8 (Jan.) 1943. Gates, R.: Roentgen Findings in Immersion Blast Injuries, ibid. 41: 12-19 (Jan.) 1943.

ACCIDENTS ON THE FARM

H. HERMAN YOUNG, M.D.
and
RALPH K. GHORMLEY, M.D.
Rochester, Minn.

The number of accidents that occur on farms each year and the severity of the resultant injuries have for years been appalling to doctors in agricultural communities, and yet to date comparatively little work has been done to prevent these accidents. In the past the national state and local safety councils have directed all their efforts toward the prevention of traffic and industrial accidents and have turned to the problem of farm safety only recently.

In Minnesota attention was first directed to the problem of farm accidents in 1934. In that year a safety contest was inaugurated in the state 4-H clubs, and safety soon became one of the most popular activities of these clubs. Other agricultural organizations and their leaders became interested, and a section soon was set up in the Minnesota Safety Council to which was assigned the problem of developing an educational program for the farmers of the state. As a result of the efforts expended, the farm safety program in Minnesota has now progressed from the state planning stage to local action. Emphasis is now placed on organized work in the counties and individual townships; the latest innovation is the holding of regional farm safety institutes in various sections of the state. To these meetings come representatives from the local farm bureaus, rural youth organizations and 4-H clubs in the surrounding counties. At these meetings members of the various sections of the Minnesota Safety Council and a doctor who has been called on to treat farm accident cases discuss with these representatives the causes of farm accidents and the means of preventing them. The representatives carry back to their local organizations the information they have received. Each county then plans its own safety program and proceeds with it. One county conducted a survey of farm accidents which revealed the fact that the total loss of time due to accidents in that county during one year amounted to six man years. In another county members of the farm committee of the safety council called on every owner of a corn picker and discussed safety. The result was the complete elimination of mishaps caused by the corn picker in that county that year.

The problem of accidents on the farm is national in scope, although in details it varies with different localities. Tractors are used fairly commonly throughout the country, but other pieces of machinery are employed only in certain sections. All farmers in the corn belt are familiar with the mechanical corn picker but may not be so familiar with the large combines of the wheat country and so forth. Various other sections of our country have their individual differences, but the basic need of all sections is that the farmers learn to use their machinery safely. The National Safety Council now has a section which promotes farm safety in all sections of the country, but the main action on prevention of farm accidents of necessity must be local in nature in order to cope with the varied problems.

Farming is today one of the most hazardous of all occupations. Other industries are compelled by law to provide safety devices for their employees and care and compensation for any one who is injured. Many individual industries have realized the importance of safety for their employees, and they not only conduct safety courses for the operators of various machines but penalize any employee failing to comply with safety requirements. They are constantly on the alert for the causes of accidents in their plants and attempt to remedy them. This is not true of the farmer.

The farmer is generally his own boss or employs only a few men. As a rule he does not carry compensation, hospital or accident insurance. However, he is handling machinery that is as powerful as many other industrial machines and handling this machinery over rough ground in contrast to many industries that can bolt the machine securely to a solid floor. Furthermore the farmer uses his various machines seasonally, whereas the operator of a punch press, for instance, uses the same machine daily and has an opportunity to become familiar with the sources of danger. In order to speed up production, the farmer permits the removal of safety devices from his machines or fails to replace them after repairs are made. He often attempts to relieve a clogged machine while it is still in motion or may use a piece of makeshift apparatus that is entirely unguarded. He uses old timber when safe flooring is necessary, operates buzz saws unprotected, handles unruly livestock, is required to walk on uncertain footing and in countless other ways exposes himself to danger. In doing his tasks he is out in all kinds of weather and must often wear bundlesome clothes that hamper quick movements. These are but a few of the dangers that lurk on the farm. To these must be added the danger of gas gangrene and tetanus, for the farmer's hands and clothes are contaminated with fertilized soil and manure, and any wound may permit the entrance of these organisms into the body, where they produce disastrous results.

Table 1.—*Causes of 575 Accidents on the Farm, 1935-1943* Inclusive*

Cause	Number	Deaths	Mortality Rate per 100 Accidents
Falls	193	9	5
Machinery	186	0	0
Livestock	104	5	5
Fire (burns)	15	2	13
Falling trees	13	1	8
Ax	13	0	0
Unclassified cause	51	1	2
Total	575	18	3

* Average of 64 farm accidents per year seen at the Mayo Clinic.

In spite of medical and surgical advances that have been and are being made, the physician cannot help but be impressed with the almost utter hopelessness of many patients who have been injured while at work on a farm. The best cure still lies in prevention of the accidents. The first step in prevention likewise lies in educating the farmer to the facts of how, where, when and why accidents happen on the farm.

Accurate and complete statistics on farm accidents in our country are not available. So that one may know the problem that exists, such statistics must be available; and it is for this reason that the records of the Mayo Clinic were recently reviewed. Since the clinic is situated in a farming community, it was felt that this review might throw some light on the problem.

From the Section on Orthopedic Surgery, Mayo Clinic.

Read before the Section on Orthopedic Surgery at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

STUDY OF 575 FARM ACCIDENTS

In the nine years from 1935 through 1943 there were 575 accidents on the farm which caused the person injured to come to the Mayo Clinic. This makes an average of 64 farm accidents a year which sent patients to this one clinic alone. Several patients were involved in more than 1 accident in the nine years. The majority of these patients came from the surrounding four or five counties, but the total number is not an index of the total farm accidents that occurred in those four or five counties. Many other patients were treated by physicians in their immediate locality and others died before reaching medical care. The total at the clinic may be said to represent with fair accuracy the number of serious accidents that occurred in these counties during that period. Included in the study were all accident cases encountered at the clinic which were due to falls, farm machinery, livestock, injuries in the farm home, buzz saws and so forth. All automobile and highway accident cases were omitted.

Table 2.—*Injuries Sustained in 193 Accidents on the Farm Due to Falls, 1935-1943 Inclusive*

		Injury *				
Type of Fall	Total Accidents	Fracture	Transverse Myelitis	Traumatic Amputations	Perforating Perineal Wounds	Miscellaneous †
Off farm equipment	42	29	4	0	3	12
Miscellaneous types	39	29	0	0	3	14
From haymow	20	15	3	1	3	1
Off buildings	16	18	3	0	0	1
On stairs	16	15	2	0	0	2
Off horses	15	12	0	0	0	3
On ice	11	12	0	0	0	1
Off ladders	12	15	0	0	0	4
Off scaffolds	12	13	3	0	0	0
Out of trees	8	10	1	0	0	0
Total	193	168	16	1	9	38

* Some patients had more than 1 injury.
† Lacerations, dislocations, cut tendons and so forth.

Falls.—Falls led all other causes of accidents in this series and carried a mortality rate of 5 per hundred accidents (table 1). The commonest accident of this type was that in which the patient fell off some piece of farm equipment. In close succession then came miscellaneous falls—falls from haymows, buildings, stairs and horses, on ice and off ladders, scaffolds and out of trees (table 2). The youngest person injured in a fall was 3 years of age and the oldest 84 years. The average age of the patients in this group was 42 years (table 3). The commonest injury sustained was a fracture of one or more bones. Falls caused 168 fractures (table 2). In addition 16 patients, 3 of whom died as a result of their injury, had transverse myelitis, 1 had a traumatic amputation and 9 had perforating wounds of the perineum. Three of the last group died as a result of their injury. The perforating wounds of the perineum are interesting because of the manner in which these accidents happen. Eight of the 9 patients suffering from perforating wounds of the rectum or perineum gave the history of impaling themselves on the handle of a pitchfork as they fell or jumped from a piece of farm machinery or as they slid down a haystack or out of the hayloft. The handle of the fork entered the rectum of 1 patient without causing any external wound; yet at necropsy nine perforating wounds in the bowel and a ruptured liver were found. The remaining patient in this group sustained his injury when he fell from a wagon and became impaled on sharp corn stubble in the field. It is interesting to note that in this entire series no patient was injured with the tines of the pitchfork.

Table 3—*Range of Ages of the Persons Involved in 575 Accidents on the Farm, 1935-1943 Inclusive*

	Age of Patient, Years		
Type of Accident	Youngest	Oldest	Average
Falls	3	84	42
Machinery	2	78	37
Livestock	3	85	46
Burns	7 mos.	83	35
Falling trees	17	71	44
Ax	16	62	29
Unclassified	15	84	42
For whole series	7 mos.	85	39

Farm Machinery—Accidents attributed to farm machinery followed falls in a close second place as the cause of farm accidents in this series; there were 186 such accidents (table 1). Although there were no hospital deaths in this group (table 1), the morbidity rate was extremely high. Exactly a third of the patients in this group suffered from traumatic amputation of a part or the whole of one or more extremities. There were in addition 110 fractures, 2 cases of transverse myelitis and 7 cases of avulsion of the skin of the penis and scrotum. The youngest patient injured by a piece of farm machinery was 2 years old and the oldest was 78. The average age in this group was 37 years (table 3). The tractor caused the largest single group of accidents and was followed closely by the corn picker, corn shredder and buzz saw (table 4). The injury of particular interest in this group is that of avulsion of the skin of the penis and scrotum. It happens usually as the farmer attempts to step across a moving belt or flywheel. The overalls become caught in the belt or wheel and are twisted and torn from the patient's body. As the clothing is torn off, the skin of the penis and scrotum becomes entangled and is stripped away. These accidents produce shock, and considerable surgical care is required for restoration of the parts by skin grafting.

Table 4.—*Injuries Sustained in 186 Accidents on the Farm Due to Machinery, 1935-1943 Inclusive*

		Injury *				
Machine or Method	Total Accidents	Fractures	Transverse Myelitis	Traumatic Amputations	Avulsions of Penis and Scrotum	Miscellaneous †
Tractor	34	33	2	2	0	12
Corn picker	29	14	0	15	1	6
	24	10	0	19	0	8
	20	16	0	0	0	8
	16	2	0	7	0	19
	9	2	0	4	1	6
Grain elevator	8	7	0	2	1	1
Feed mill	7	4	0	2	0	2
Combine	7	3	0	1	3	1
Corn binder	6	3	0	3	0	1
Gas engine	6	4	0	2	0	0
Mower	6	3	0	2	0	4
Rope and pulley	6	5	0	1	0	0
Grain binder	4	3	0	0	1	1
Miscellaneous machines	4	1	0	2	0	2
Total	186	110	2	62	7	71

* Some patients had more than 1 injury
† Lacerations, dislocations, cut tendons and so forth

Livestock.—The third most frequent cause of the accidents in this series was livestock; there were 104 such accidents (table 1). The mortality rate in this group was 5 per cent; three deaths were due directly or indirectly to horses and two deaths were caused by bulls (table 5). The youngest person injured was 3 years old and the oldest was 85. The average age for this group of patients was 46 years (table 3). Although the bull is generally considered the most dangerous animal on the farm, it may be seen in table 6 that the horse accounts for most of the livestock accidents; 66 of the 104 accidents were due directly or indirectly to horses. There are several reasons for this high incidence. First of all there are more horses than there are bulls on the farm and the farmer handles them oftener in his daily work. When handling a bull the farmer usually treats him with respect, but he is likely to become careless in the handling of a horse. Table 6 reveals that fractures were the main injuries received in accidents caused by livestock. In addition there were 3 cases of transverse myelitis and 51 miscellaneous injuries.

Table 5.—*Deaths at Clinic from Accidents on the Farm, 1935-1943 Inclusive*

Accident	Patient's Age, Yrs.	Injury	Cause of Death
Fall			
On pitchfork handle	47	Perforating perineal wound	Peritonitis
On ground..........	53	Lacerated knee	Gas gangrene
Against radiator....	83	Fractured ribs	Bronchopneumonia
On pitchfork handle	63	Perforating perineal wound	Peritonitis
On pitchfork handle	17	Perforating perineal wound	Peritonitis
From haystack.....	46	Fractured cervical vertebra with transverse myelitis	Pneumonia
Downstairs..........	63	Fractured humerus	Pulmonary embolus
Downstairs..........	62	Fractured cervical vertebra with transverse myelitis	Paralysis
Downstairs..........	60	Fractured cervical vertebra with transverse myelitis	Shock
Run over by horse-drawn binder	44	Multiple fractures	Shock
Kicked by horse........	69	Fractured mandible and maxilla	Bronchopneumonia
Kicked by horse........	10	Fractured skull	Meningitis
Attacked by bull.......	56	Fractured cervical vertebra with transverse myelitis	Paralysis
Attacked by bull.......	44	Fractured cervical vertebra with transverse myelitis	Paralysis
Lighting stove with kerosene	83	Burned 75 per cent of body	Shock
Clothes caught fire from lantern	70	Burned 50 per cent of body	Shock
Struck by falling tree..	25	Transverse myelitis	Shock
Scratched with barbed wire	71	Laceration of scrotum	Gangrene and pulmonary embolus

Miscellaneous Accidents.—Seventy-seven accidents in this series were caused by the ax, by falling trees or by a group of unclassifiable causes (table 7). Again, fractures were the most frequent injury; traumatic amputations occurred in 2 cases and transverse myelitis in 4.

There were 15 cases of burns in this series of accidents with two hospital deaths, a mortality rate of 13 per hundred accidents (table 1). Most of these burns occurred through the ill advised use of kerosene or gasoline in the starting of a fire or through the explosion of a stove or bottled gas. The youngest person burned was 7 months old and the oldest was 83 years; the average age for the group was 35 years (table 3).

In the entire group of 575 accidents in this series the injuries sustained consisted of 396 fractures, 65 traumatic amputations, 25 instances of transverse myelitis, 9 of perforating perineal wounds, 7 avulsions of the skin of the penis and scrotum and 208 miscellaneous injuries (table 8). Some of the patients had more than 1 fracture or miscellaneous injury. The youngest person involved in an accident on the farm in this series was aged 7 months, while the oldest was aged 85 years. The average age in the entire group was 39 years (table 3). Although these accidents cover almost the entire span of human life, the average person is injured and suffers death or a permanent disability at the age when he is the most productive. The problem, therefore, is an economic one as well as humanitarian. In this series of cases there were eighteen deaths, a mortality rate of 3 per hundred cases (table 1). This does not mean that these were the only deaths in the counties around the clinic which were due to farm accidents during this nine year period. These eighteen deaths represent only those patients who had sustained an injury on the farm and died after reaching the Mayo Clinic. Other persons died before medical aid could be given by any physician, and some may have died after receiving medical care elsewhere.

Table 6.—*Injuries Sustained in 104 Accidents on the Farm Due to Livestock, 1935-1943 Inclusive*

Animal	Total Accidents	Injury *		
		Fractures	Transverse Myelitis	Miscellaneous †
Horses..........................	45	34	0	24
Runaway horses................	21	19	1	11
Bulls and steers................	17	19	2	4
Cows............................	15	11	0	7
Pigs..............................	5	2	0	4
Sheep............................	1	0	0	1
Total........................	104	85	3	51

* Some patients had more than 1 injury.
† Lacerations, dislocations, cut tendons and so forth.

COMMENT

Complete statistics on farm accidents and their mortality rate are impossible to obtain because not all these accidents are reported. The National Safety Council[1] reported 17,500 accidental deaths due to occupation and 1,800,000 occupational injuries in the year 1944. Of these deaths 4,300, or about 25 per cent of all occupational deaths, were those of farmers or ranchers who were killed at work. More accidental deaths occurred in agriculture in that year than in any of the other five major industrial groups. In addition there were 900,000 nonfatal farm home accidents and 225,000 nonfatal farm work accidents in 1944. Also 14,800 farm residents were accidentally killed in 1944,

Table 7.—*Injuries Sustained in 77 Miscellaneous Accidents on the Farm, 1935-1943 Inclusive*

Type of Accident	Total Accidents	Injury *			
		Fractures	Traumatic Amputations	Transverse Myelitis	Miscellaneous †
Cut by ax................	13	7	2	0	11
Hit by falling tree.......	13	8	0	2	4
Unclassified accidents....	51	18	0	2	33
Total...............	77	33	2	4	48

* Some patients had more than 1 injury.
† Lacerations, cut tendons, dislocations and so forth.

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[1] Accident Facts, Chicago, National Safety Council, Inc., 1945.

and this total is exclusive of those killed in motor vehicle accidents.

By using this report of the National Safety Council as a basis (and this report showed a decrease of 5 per cent from previous years) it can be estimated that approximately 38,700 farmers were killed at work, 133,200 farm residents were killed accidentally and 10,125,000 nonfatal farm home and work accidents occurred in the United States during the nine years covered by our present report.

The problem of the farm accident is a serious one. Although today some effort is being directed toward reducing such accidents, more needs to be done. Prevention of these accidents is by far the best treatment of them, and the first step in this prevention is in educating the farmer in methods of safety. Children, for instance, have no more right to be near or on a piece of operating farm equipment than around a punch press or on a moving locomotive, and yet they are permitted to be there daily.

SUMMARY

Five hundred and seventy-five accidents on the farm caused the persons injured to come to the Mayo Clinic in the nine years from 1935 to 1943 inclusive. Most of the injuries were due to falls, farm machinery and livestock. Most of the persons when injured were in their most productive years. Accurate statistics of farm accidents are not available, but the mortality rate from them is known to be extremely high. Other industries have reduced their accident rate by eliminating hazards as much as possible and by educating their employees in the safe ways of handling machinery. An educational program for the farmer is the first step in decreasing the number of accidents on the farm.

Table 8.—*Type of 575 Accidents on the Farm, 1935-1943 Inclusive*

		Injury *					
Type of accident	Total Accidents	Fractures	Traumatic Amputations	Transverse Myelitis	Perforating Perineal Wounds	Avulsions of Penis and Scrotum	Miscellaneous †
Falls	193	168	1	16	9	0	38
Machinery	186	110	62	2	0	7	71
Livestock	104	85	0	3	0	0	51
Miscellaneous types	77	33	2	4	0	0	48
Burns	15	0	0	0	0	0	0
Total	575	396	65	25	9	7	208

* Some patients had more than 1 injury.
† Lacerations, dislocations, cut tendons and so forth.

ABSTRACT OF DISCUSSION

Dr. Hugh T. Jones, Los Angeles: Drs. Young and Ghormley are to be commended for bringing this problem of farm accidents before the medical profession and the proper civic and farm organizations. It is natural during the war years that emphasis has been placed on the problems connected with industrial injuries. The law compels insurance of these men in industry, and insurance companies have been helpful in the prevention of industrial injuries and accidents. Farm laborers in general throughout the United States have little insurance protection, and statistics on farm injuries are meager. At first thought we in California are likely to think that without the many corn pickers and corn shredders of the Middle West we enjoy a certain immunity to farm accidents. On second thought, we know that we have ladders, wagons, trucks, stairs for serious falls, thrashing and mowing machines with moving parts, livestock, barbed wire, falling trees and accidents with pitchforks, all of which carry a threat to safety. The ever prevalent gas and tetanus bacilli are especially prevalent in farming communities. About a month ago I attended a meeting of the California Safety Council in Los Angeles. I know that at present its main concern is with the terrible traffic toll. However, I am sure that this council could be helpful in the problem of farm accidents if given the proper information. A review of hazards in each state under the direction of the safety council in each state seems proper, and the cooperation of the medical profession with the various safety councils also seems important to me. Before we are through, it is likely that some plan of insurance for farm workers will be arranged. Then, with better statistics, better plans of prevention can be instituted. In the meantime, such educational work as Dr. Young and Dr. Ghormley are carrying out will be helpful in bringing about the needed change.

Dr. Douglas D. Dickson, Oakland, Calif.: Drs. Young and Ghormley are to be commended on their excellent survey of farm accidents and their study of the patients cared for at the Mayo Clinic during this nine year period. In making an effort to investigate the origin of such accidents, one finds that data are not available except in very few states. Their exhibit illustrates beautifully the extent and the importance of this problem. I should like to emphasize the statement with regard to the fact that more accidental deaths occur in agriculture than in any of the other five major industrial groups. Startling facts are also revealed by a recent report of the National Safety Council. It reports that agriculture, with more workers than any other industrial group, had a death rate of 53 per hundred thousand workers. In all other industrial groups the rate was 31 per hundred thousand. In males alone only two causes of death rank above accidents, namely heart disease and cancer. In other words, accidents account for more deaths than such common diseases as pneumonia, tuberculosis and nephritis. In a survey made in 1945 in the state of Wisconsin, people on thirty-five farms were interviewed, revealing that one out of every nine full time operated farms was the scene of a farm work accident resulting in either loss of time or, in many instances, loss of life. Dr. Young has already pointed out that a large factor in the causation of many accidents is that farmers use machinery who are not trained in the use of such equipment and that they are not highly skilled and trained in such work. Their equipment in many instances is poor and in a poor state of repair. Other industries, by means of study and educational programs, have eliminated hazards to a great extent, accounting for these startling figures. Large industrial concerns come under the jurisdictions of federal and state inspections as a means of instituting safety devices and organized educational programs. The National Safety Council should be accredited for its work in this educational program.

Dr. Hugh H. Young, Rochester Minn.: I want to thank both Dr. Jones and Dr. Dickson for their discussion and to make one other statement. You will note that in the groups that Dr. Ghormley and I discussed there were a number of young children who were hurt. These children were hurt while riding on pieces of farm equipment. That same farmer, in another industry, operating a punch press, for instance, would not be allowed to bring his child to work with him and he would not think of doing so. I believe that this is one place where we can make an effort to reduce the number of accidents in children.

Hoarseness in Children.—One subject in laryngology that has not received sufficient attention is hoarseness or other faulty voice conditions in preadolescents or young adolescents. We all seem to expect to hear the "cracked voice" in boys and have a tendency to laugh it off and to assume that the lowering of the voice in girls is just part of the transition phase. It is not fair to these children to take this attitude, and it is our duty to investigate these conditions, as many times there are associated remedial causes which should be eliminated.—White, Francis W.: Some Causes of Hoarseness in Children, *Ann. Otol., Rhin. & Laryng.* **55**:537 (Sept.) 1946.

INDUSTRIAL OPHTHALMOLOGY AS OF 1946

HEDWIG S. KUHN, M.D.
Hammond, Indiana

Prior to the war the field of industrial ophthalmology was actually a subdivision of the field of industrial hygiene, strange as that may seem now. The emphasis was entirely on treatment of injuries, traumatic surgery, study in prevention and treatment of toxic damage to the external eye, or by systemic effect producing intraocular pathologic change, and, finally, the study of medicolegal procedures and workmen's compensation rules and regulations. Actually the term industrial ophthalmology is already obsolete, the more correct term being occupational ophthalmology.

Some phases of work held to be within the scope of occupational ophthalmology are the following:

1. New visual testing technics have been devised to provide accurate information whereby physical capacities (eyes in this instance) are matched to job demands.

2. Modern concepts of corrective procedures include a thorough knowledge of both actual work distances and mechanical details of job demands. Here the future use of special occupational glasses (not goggles) in textile and hosiery industries in particular gives promise of being a tremendous contribution to visual comfort, increased production and the solution of many industrial relations problems.

3. A development of a new type of fact finding approach in the handling of properly recorded visual statistics by using modern punch card analytical procedures with resulting profiles and patterns of visual performance has been the contribution in particular of Professor Joseph Tiffin and his staff in their brilliant work. Here the nonmedical man has put into the hands of medical people a new and significant tool.

4. Lagging somewhat in understanding and in outlined procedures is the development of closer relationships between top management and the medical profession—a "must" if industrial eye problems are really to become a part of the responsibility of those ophthalmologists who are interested.

5. Active interest in the field of safety to eyes and to individuals from eyes (body accidents due to visual defects) and the understanding of protective equipment is bridging the previous gap between the work of safety engineers and that of professional ophthalmic services.

6. An understanding of illumination in industry (as different from illumination in schools or in homes) and the use of color in reducing visual fatigue is now being developed by illumination research engineers (not salesmen) and by Faber Birren, the du Ponts and others.

7. An adaptable, elastic and yet definite understanding of what constitutes a minimum industrial eye service for either a large or a small plant is the phase of our subject that draws together all other phases into a program.

8. There is now also recognition that our medical schools, both in the undergraduate and in the graduate years, need to incorporate courses with full information of all problems indicated. Research work in scientific centers will broaden.

9. Tied to the lack of present educational opportunities for ophthalmologists interested in industrial work is one stark question that must be faced, by this group in particular; that is, how many ophthalmologists are going to be interested in industrial ophthalmologic work as it is understood to be of this year 1946? Are ophthalmologists aware that industry will demand service, including all or part of such services as we are discussing? What is or will be our position in carrying through? Can we "deliver"? Are we willing to play a part or not; if so, what part?

10. What are some of the immediate problems where knowledge is meager and further research work is urgent, such as special near point complications, new chemical hazards, a better understanding of ultraviolet and infra-red hazards and training of special personnel to carry out details of industrial eye programs?

Of greatest importance is a thorough knowledge of a few highlighted angles.

VISUAL MASS TESTING TECHNICS

The first step taken because of pressure for war production was research underlying the subsequent development of various mass testing instruments and technics. It is important here to emphasize that the continued use of the phrase "visual screening" is both inaccurate and psychologically inadvisable. In the more distant past, job applicants and labor in general have felt (and formerly rightly so) that preemployment visual tests (as well as physical examinations) were a procedure utilized to screen out, i. e. refuse jobs to, applicants. Actually, visual testing procedures as developed do the opposite. They are the best insurance of acceptance of an applicant and his proper placement. Also, the discovery of substandard visual skills among payroll employees in a properly conducted visual survey has made possible the correction of many visual defects and the continuance of jobs formerly in jeopardy.

Proper testing of applicants can be and is being done either within industry itself or in the professional consultant's office. Visual surveys of any given plant must, of course, be done not only in the plant but as close to the job as is physically possible. In the past (and too often even now) the only eye examination given an applicant was the Snellen distant vision test with the use of an improperly lighted wall chart by an indifferently trained person. In some instances such tests are made in the waiting room over the heads of the applicants who, if they had not already memorized the chart, have ample opportunity to do so. In using the battery tests, malingering is reduced to a minimum and the person is given an accurate series of tests including much more than distance acuity. These tests, usually best given in the employment or personnel offices by specially trained lay technicians, are tests recording visual skills. They are not eye examinations and are never thought of as such. They belong in the category of aptitude tests. They point the road to proper job patterns and lead the way to the doctor's office and timely corrective procedures.

There are a number of so-called battery instruments: The telebinocular has been used successfully in many industries. When the medical director or professional consultant is sufficiently interested, valuable information can be secured. By changing the type and sequence of the targets, modifying the record blanks and reevalu-

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Read before the Section on Ophthalmology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

ating the conclusions, our staff uses this instrument. However, in many instances the instrument seems to have been sold as a commodity by salesmen and left on some one's desk for industry to struggle with.

The Ortho-Rater was developed by the Bausch and Lomb Optical Company. This instrument and the follow through program met not only some extremely critical war production needs but some even more urgent military needs. The instrument records in detail those visual skills thought important now. New tests can be added as the need is demonstrated and as our knowledge increases. The training of the technician operating the instrument, the breakdown of the recorded data into practical job standards, the support and assistance given to personnel, employment and medical staffs, the continuing scientific research made possible through the services of the Purdue Industrial Visual Institute, makes the program (the instrument being a mere tool) a great step forward for industry and for us. The institute faculty includes medical members.

The Sight-Screener, developed by Paul Boeder, scientific director of the American Optical Company, is another instrument which will play a part in this field. To date, however, there has not been developed the supporting follow through we should like to see for the evaluation of data revealed or for the continuing research and guidance needed by industry and its professional consultants. It is to be hoped that this phase of the contribution of the American Optical Company will be developed. There is always a need for various types of testing equipment and always plenty of room for further research.

Visual data important to secure and record for each employee, in whatever way is practical, include (1) distance acuity with and without correction, (2) near acuity with and without correction, (3) phorias for distance and near, (4) stereopsis for distance and near and, (5) color appreciation. The medical profession is most interested (as far as acuity goes) in a record of acuity for distance without any correction. This is essential for future reference and for possible medicolegal purposes. On the other hand, personnel, placement and training officers are most interested in the vision of an employee with the correction he is actually wearing, that being the pair of eyes with which that employee is actually operating and producing. Both records are essential.

All data secured in a battery of tests confined to one instrument can also be obtained in one's private office by a series of individual tests: projection charts for distance acuity, Maddox rod or prisms for muscle imbalances, Verhoeff stereoscope for depth perception, Ishihara color chart and the various near vision acuity cards. It might be well here to emphasize the appalling lack of standardized, accurate and reliable near vision acuity test. The ordinary fingermarked reading card, in its many variables, and an assortment of substitutions such as the Lebensholm chart and the Guibor chart are the only technical equipment the professional man has with which to record exact near vision data.

SPECIAL CORRECTIVE PROCEDURES

To date, substandard visual skills and actual acuity defects are only in part correctible. It is important that industry itself understand this and that we do also. In most instances one can correct a refractive error. Such a correction given to an individual for his occupational needs must be based on his actual work distances. If these distances are identical with his personal needs, the prescriptions are identical; if not, he will require two pairs of glasses. Unusual job demands, for instance, are looping (work at 8 inches), blueprint and layout work (24 to 36 inches) or inspection of hot steel on moving rolls (at a distance of 4 feet to 6 inches). The best refractive skill is required to correct properly for most occupations, but this skill can be tragically ineffective unless actual work operations and distances have been witnessed by the refractionist. A high hyperope doing near vision inspection of great detail may require not only more plus but perhaps a prism base-in, while a young myope working at 8 inches would certainly get into difficulties if given a full minus correction for use at 8 inches. Workers seldom can reliably describe their work distances. If unable to visit local industries, one may need to ask the employee to bring a memorandum from the plant giving exact work distance. Industrial refractions should be supplemented by a fundus examination, notation of any external pathologic conditions and the taking of rough form fields. Here a note of warning is indicated: the concept of specific job correction can be exploited by unethical or income-seeking services; all benefit in vitally needed cases will be erased if the truism is made into a racket.

While refractive errors are in the main correctible, a lack of color sense and complete lack of stereopsis are not. There are some phorias (exophoria for near especially) that are definitely amenable to orthoptics. In cases in which the exophoria is producing symptoms and if orthoptic training is available, such cases (being correctible) should be referred. However, nothing is more destructive to confidence in an eye program than (as matters stand today) to (1) send workers lacking stereopsis or color vision or minor muscle imbalances out for correction only to have these men told "there is nothing wrong with you" or (2) to send out persons with exophoria and persons whom orthoptics could help when orthoptic training facilities do not exist. Such blundering practices do not "make friends and influence people."

STATISTICAL ANALYSIS OF VISUAL DATA

Perhaps the greatest contribution is the fact finding approach as developed at Purdue University and the type of thorough research work of Berens and Hardy and Rand. Medical people are definitely allergic to the vocabulary of statisticians and to any challenge made to their clinical and intuitive evaluation. It requires an earnest and sincere effort to keep an open mind to this phase of industrial eye problems if one is to move forward with the vanguard of thinking and to profit by the consistent drive to validate previously presumed "facts." An instance is our conception that 20/20 vision is "normal." In analyzing acuity tests in a plant of 6,800 employees, this is shown to be incorrect; 54.9 per cent had a vision of 20/15.

Statistical study of visual data is already making it possible to develop formulas whereby job patterns (predicted visual skills) can be set up to match visual job demands. Such an approach (which supplants the old trial and error or survival of the fittest procedure) is not yet easy for some of us to swallow. I also was allergic to this type of theoretical thinking on the part of so-called "laymen," who proceed then to lay down boundaries for us, though applied psychologists and statisticians with Ph.D. degrees are experts in their own right. The consistent revelation of results in line with predictions has forced on me the conviction that we, as physicians, dare not waste this valuable new tool by wilful resistance and can overcome our reluctance even to the point of eager enthusiasm.

TOP MANAGEMENT AND THE PHYSICIAN

In the past the ophthalmologist has received the employee with a perforating injury of the eye in the hospital; he has treated lime burns in his office; he has diagnosed an optic atrophy in a man exposed to lead or methyl alcohol poisoning and found the toxic source. But as of 1946 he holds a position parallel to that of the metallurgist or research director of an industry. When a steel plant gets a batch of steel that does not behave properly, the problem is thrown into the lap of the metallurgist and his laboratory. Industry is now throwing problems connected with "visual bottlenecks" of every kind into our laps. We in our laboratories have to learn how to find the answers. The problem given us may be tied to the labor turnover found among loopers (who number 200,000 in the United States)—the turnover is actually almost entirely due to visual fatigue, pain and discomfort. On the other hand, our problem may be one of alerting a plant when an isolated case of epidemic keratoconjunctivitis presents.

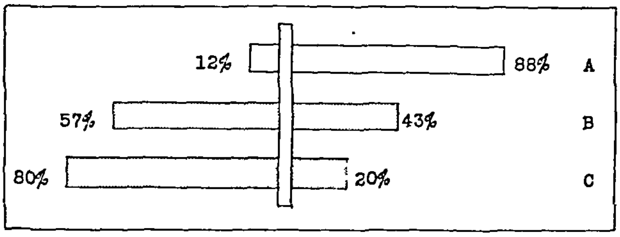

Fig. 1.—Depth related to safety (from "Spotting Accident Prone Workers by Vision Tests," Factory Management and Maintenance, June 1945).

When the professional eye consultant is asked by top management to suggest improvements in the handling of their eye problems, it is essential that we seek to understand industry: their personnel structure, no two plants being alike, the interrelationship between departments, each jealous of its own prerogative, and the special idiosyncrasies of plants having absentee control from a mother plant where perhaps some diehard resists change. We do need to throw our academic reserve overboard. No doctor loses caste with management or the workers if he drops the use of sixty-four dollar words and learns the vernacular of the men that he is or will be working with. It is usually best to work out an industrial eye program step by step and not to advocate a sudden "all or nothing" proposal.

An eminent ophthalmologist who has contributed much to industrial eye work made the flat statement once that it was impossible to work with unions. It undoubtedly was difficult to do so in the community where this colleague practices but that is not true in all parts of the country or for every union or for every ophthalmologist. There are many industries in which it is far easier to work with the unions than with management. In one instance in my experience the entire ophthalmologic program (after being set up at management's request) was backed and supported by the union, and mandatory goggles protection was policed by the union itself. Real salesmanship is required in working with industry, a good deal of give and take. The many and varied challenges—no two plants the same, no two programs the same—are part of the exciting returns made.

SAFETY IN EYES

While plans for the protection of the eye have in the past been mainly in the hands of a lay safety director, the ophthalmologist is increasingly concerned with what the actual hazards to eyes are and the protective equipment required for each type of hazard; and he recognizes also the hazards from eyes (due to defective sight).

We have been inclined to say empirically that stereopsis, for example, is necessary for safety on certain jobs—arriving at this opinion by process of logic only. Instead, we need to seek evidence from surveys and experiments conducted with proper controls. Our logic relative to stereopsis and accidents turned out to be good for certain jobs, as shown in figure 1. In a metal industry three groups of employees were studied separately over the same period of time, group A having had no accidents, group B having had a high frequency of minor injuries and group C having had serious injuries. This chart shows that of group C (serious injuries) only 20 per cent scored above average on this test. Such studies were conducted by N. Frank Stump, Ph.D., at Revere Copper and Brass Inc.

Such relations that can be demonstrated between accidents and inefficient visual performance illustrate the method by which the fact finding approach is conducted. Dr. Stump established the desirable pattern of visual skills on a battery of tests for accident free workers on those jobs that he studied. For purpose of classification of employees as hazardous or accident free, it was determined which workers qualify on all, on some or on none of these tests. From such tests it was possible to predict which new employees would accumulate the largest number of accidents. New employees whose vision deviated greatly from the visual standard, logic would tell us, should have the largest accumulation of accidents, and they did according to the facts. Figure 2 shows the results. In the first eighteen days of employment those with the greatest deviation from the optimum visual pattern had a 61 per cent accumulation of accidents, those with moderate deviation a 29 per cent accumulation and those with negligible deviation an 11 per cent accumulation—a difference of 50 per cent between the extreme groups. But again these sticklers for real validation said, "These groups will equalize if the follow-up is continued over a long period of time." This was not the case according to facts, not according to the results shown in figure 3. Over a thirty-eight day period these same three groups

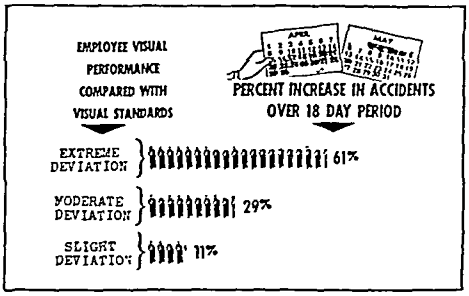

Fig. 2.—Ortho-Rater tests related to safety. (Figures 2 and 3 are from "Four Points to Safety," Safety Engineering, September 1945.)

had 106 per cent accumulation, 43 per cent and 31 per cent. There is a difference of 75 per cent between the extreme groups. This illustrates a technic of using cold facts and substantiating them—management's language.

A previous study by Purdue University on 8,000 workers in a steel mill revealed that patients with "serious injury" tend to overconverge at far and underconverge at near. Figure 4 shows that among those with the greatest change in convergence from far to near 4 per cent had had serious accidents, while among those with the least change in convergence nearly 9 per cent had had serious accidents, a ratio of more than 2 to 1.

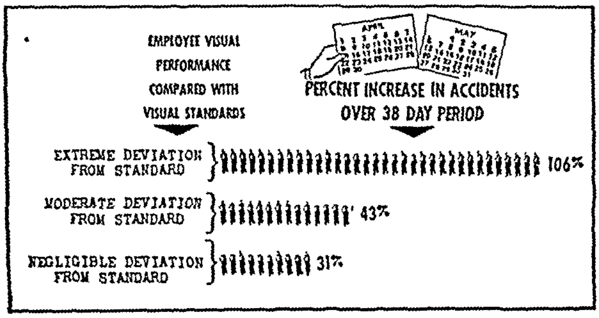

Fig. 3.—Ortho-Rater tests related to safety.

When management invites me to talk to the foremen, to safety committees, to shop stewards, I accept, emphasizing the need of proper maintenance, adjusting and servicing of goggles (especially prescription goggles), thus insuring greater success to a program of eye safety. I find this to be an enlightening experience, often an exciting and amusing one. True, one needs to have a sense of humor, a real understanding of all the facts involved (no bluffing) and a fairly thick skin to toss back effective answers to questions coming from such an audience.

At a special conference in October in which all parties concerned will be represented, an effort will be made to formulate a basic policy and definite principles with reference to the sale of goggles, bargains and rebates, as well as proper methods for maintenance, adjusting and dispensing. It is earnestly hoped that existing unethical and improper practices will thereby be corrected.

ILLUMINATION AND COLOR

It is important to mention in passing, as it belongs in one's thinking of an industrial ophthalmologic program, that the field of illumination and the use of color in industry have moved forward with great strides. Fluorescent lighting, color contrasts, research on foot-candles required, so-called brightness contrasts and ratios, and the use of directional plus indirect lighting are a part of industrial seeing.

MINIMUM INDUSTRIAL EYE SERVICE

The minimum industrial eye needs of a large plant and of a small plant are identical. The steps in setting up any industrial eye program includes variables of the following:

1. *One should make a leisurely tour of the industry* in question. Nothing can be effectively planned or carried through to completion without this step. It has proved best to be accompanied by some one who understands plant operations and individual machines and their function. Neither the medical director of a large plant nor the top management makes the best guide.

2. It is valuable to take along a check list which can be devised very simply to suit one's own needs. Prior to the visit, management gives one a list of the name of each operation, the department and the job number. Moving from one job to another, one can check off what seems to be of greatest importance (visually speaking). For instance, it would seem that a turret lathe operator needs excellent distance acuity at his multiple work distances, that coordination and muscle balance are probably an important factor, that there are certain hazards such as flying particles and that a certain type of illumination is indicated. This does not provide the proper basis for setting up *scientific visual standards* for any job. This is one's personal memorandum to understanding and for the recommending of the broad foundation for an eye program. It is one's "know how."

3. Recommendations for choice of type of visual testing procedures, for preemployment and preplacement examinations of the eye, can then be based on one's knowledge of what seems to be the most urgent need. Here judgment is required, and sometimes one acquires *judgment the hard way.*

4. The compilation of statistical data secured by visual tests is an integral part of the usefulness of a program.

5. The type of procedure to be employed in establishing a corrective plan for each individual plant is based on the statistical findings and on local professional interest and skill.

6. When management pays for having the eyes of employees refracted, one must decide where the refraction is best made and what schedule is best suited to the plant and to the examiner. Community practices, urgency of needs, geographic location of plant, type and quality of available professional help—all are details to be considered.

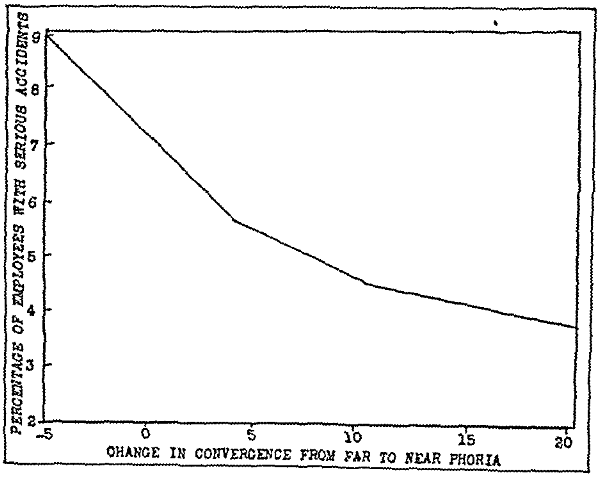

Fig. 4.—Relation between phorias and serious accidents (statistics from Purdue University).

7. Perhaps the most important part of an industrial eye program is the follow up and follow through. Just to test eyes, compile figures, refract eyes, order goggles or occupational glasses and stop there is to have produced a sterile, lifeless thing: one should keep interest alive, show results, find even better ways.

SOME SPECIAL SPECIFIC PROBLEMS IN PROCESS OF STUDY AND RESEARCH

1. One of the great fields for further research in industrial eye problems is the study of near vision visual performance. Here the great textile industries will be most greatly benefited, as will radar assembly and filament inspection and similar operations. Also the field is wide open for improved accuracy in testing equipment for use in examination of near vision function made in the office.

2. Another no man's land is in the field of radiation. Research work was done long ago by Dr. Verhoeff in his fundamental treatise and more recently by Drs. Cogan, Drinker and Kutscher. We, as ophthalmologists, are poorly equipped with facts when we are called on to testify before an industrial commission hearing the evidence for loss of vision due to infra-red or ultraviolet injury. Practical research done by and inside industry, studying variables in amount of radiation of actual welding operations, amount of energy effective at different work distances, findings with and without protection to the eye as actually used in a plant and not only so-called recommended procedures, the determination of exposure to infra-red in foundries, the part played by element of time, actual amounts of infra-red found—all this is urgently in need of further investigation and is in process of being organized. The lack of intelligence in radiation problems is revealed in the workmen's compensation cases carried to the highest court. It seems incredible but considerations which have proceeded through long laborious hours of discussion, hearing of evidence and weighing of facts all rest on our exceedingly flimsy foundation. Five cases carried to high courts were found to be concerned with strange side issues:

Case 1.—The main points involved and stressed are whether the flash sustained from another worker nearby was to be considered an accident or an occupational disease (Colorado Supreme Court).

Case 2.—In a flash case heard in 1929 the worker was given temporary total disability. In 1935 he entered a claim that the opposite eye was involved with loss of vision due to the 1929 exposure. Here attention was focused on whether the plaintiff had the legal right for a rehearing (Ohio).

Case 3.—The case of sudden loss of vision in the only good eye of a worker who had been exposed thirty minutes to the glare of an acetylene torch was carried to a high court, in spite of the presence of considerable illness, including syphilis This did not prevent the award of total loss (state of Louisiana).

Case 4.—A case in which a moving picture operator exposed to the glare of carbon arcs claimed and received total disability on the basis of occupational disease producing the pathologic condition of cataract (New York). (Whether or not this person could have had normal vision with cataract extraction did not seem to figure in the picture at all.)

Case 5.—A motor tester exposed to a flash 3 feet away, who was already blind in his right eye as the result of glaucoma, claimed and was granted total disability and blindness in the left eye from a flash also (state of Pennsylvania).

3. Will ophthalmologists be interested in meeting the challenge of industrial eye problems? If so, can they meet it? The greatest interest that is being shown at the present time is among the younger men being discharged from the service. I hope that their interest will change the figures revealed by a survey two years ago. The Joint Committee of Industrial Ophthalmology asked the National Society for the Prevention of Blindness to send questionnaires to the ophthalmologists in this country. There are a total of 6,182 ophthalmologists (this group including eye, ear, nose and throat men). Questionnaires went out to 5,511. Returns were received from 559, and of these 399 (71 per cent) expressed an interest in enlarging their industrial practice. Of these 259 (44 per cent) indicated that they were familiar with eye hazards and visual requirements of plant operations. This is certainly a drop in the bucket. Even more significant is the fact that 352 (63 per cent) of these believe that individual refractions should be done by them and in their offices. We must, in line with the needs of industry and our own multiple problems, evaluate the use of the potential talents of optometrists in arranging a refractive service for industry. Many well trained ethical optometrists demonstrated their ability on Army and Navy assignments. Others have demonstrated their understanding of industrial eye problems, refracting and guiding an eye protection program in the critical war industries in this country. Programs such as were set up at Sperry Gyroscope, one of the outstanding industrial eye programs in this country, may well form the pattern that we shall need to develop. This phase of eye service to industry demands our earnest attention.

4. The programs set up by the War Production Board in cooperation with many government agencies, and under the sponsorship of the National Society for the Prevention of Blindness, revealed the present practices of industry. While only 10 per cent of the plants receiving questionnaires returned them, these 283 concerns totaled almost a million workers and the size of the plants varied from one employing 23 to one employing 65,000. As industries willing to reveal their statistics to a government agency would be among those who had the best practices, the facts shown here were most significant and indicate the enormous problems which face industry. I do urge that industry not be stimulated further, at the moment, to do something (other than modernizing protection of the eye and job placement) about its eye problems until provision has been made to meet the innumerable requests for properly training professional help.

5. The increasing need for professional help as expressed here leads directly into the need for increasing educational opportunities. A year ago 70 per cent of the approved medical schools sent the heads of their departments of ophthalmology to the Columbia course designed to acquaint them with the scope and content of industrial ophthalmology. This is a definite expression of interest by our medical schools which, though sadly tardy, gives recognition to the urgent needs of today.

6. Participation of ophthalmologists in planned medical conventions, safety conventions, seminars of industrial nurses, personnel and industrial relations groups, are all a part of the training of tomorrow's industrial ophthalmologists. In line with this also is the reading of much literature outside the medical journals and publications. Some of the best articles dealing with industrial eye problems have been published by management, personnel and safety periodicals as well as by journals of applied psychology. It is due to this great need for informal reports of "plant experiences," which are akin to case histories, that the Joint Committee is gathering together all available material for publication in a number of our medical journals.

CONCLUSION

It has been my earnest hope that by spotlighting just a few of the problems lying within the field of occupational ophthalmology, many ophthalmologists will catch fire and take hold—some of the younger men seem more than eager. The need is great; it is a part of the basic thinking in the era of atomic energy; it is exciting and fascinating work; some previously unorthodox procedures may need to be made good and used. It is—all of it—our challenge.

112 Rimbach Street.

ABSTRACT OF DISCUSSION

Dr. Derrick T. Vail, Chicago: Dr. Kuhn has mentioned the clamor that industry is making on our doors, seeking help in the solution of its problems. The help is forthcoming in many fields. She touched on the magnificent work of Professor Tiffen and his punchcard system of job analysis in relation to ocular phases. But we are handicapped by our relatively small number. Dr. Cordes in his chairman's address summarized the past difficulties and the future possibilities, but the fact remains that at the moment we are caught short, so short that the training facilities are desperately handicapped and the number of ophthalmologists is at a minimum to answer the demands that are thrown on us from all sides. Dr. Parker Heath presented before the American Ophthalmological Society a scheme for training ophthalmic technicians under medical direction, which I think may be part of the answer to our difficulties. It is of interest to note that the American Ophthalmological Society endorsed this scheme unanimously, and it is my understanding that there will be something said about this particular phase before the section. However, the plan is to develop medical technicians who will be a real aid to ophthalmologists, and certainly industry will be able to use these workers under the direction of a competent consulting ophthalmologist who will have under his direction a number of industries in his particular area. That is one way of answering the need for personnel. Dr. Kuhn mentioned optometrists, particularly the decent fellows —and there are a number of them. We saw them in the Army. They were most useful and most valuable members of the armed forces. Without the use of these optometrists the overwhelming problem encountered by the Army would have been hopelessly bogged down. There is no reason that I can see why these optometrists cannot be used under the supervision of ophthalmologists in a proper way, so that this great work of industrial vision and industrial ocular problems can be carried out to a better condition. The last phase is the teaching of industrial ophthalmology in our medical schools. The point faced by us who are charged with the responsibility of teaching departments is whether we should devote any time to this subject in the undergraduate course or whether we should conserve our efforts in this line and direct them toward teaching in the postgraduate courses. A great deal of thought and attention should be devoted to this study. I am at the moment unable to make up my mind as to just what is the best approach to this problem from a teacher's point of view.

Dr. A. C. Dick, San Diego, Calif.: All medically trained persons must become more cognizant of the meaning and importance of healthy industry to the stability of our form and manner of living together as a people. This will imply that the average doctor will have to spare a little time from the sanctuary of his office to learn more of the mechanical and human aspects of production matters. Certainly it will imply that he shall look on his average patient in a new light. By thinking of some of these matters in this way the doctor will make an enormous contribution to industrial efficiency, community stability and political sanity. Industry needs his help and during the war has come to recognize this need more definitely than ever before. When this call for help comes, as it will, what are the chances that it can be met? In general, the record of the American medical profession is such that we could state unequivically that the answer would be in the affirmative. In highly integrated industry the health needs of the employee cannot be met without the assistance of highly trained specialists in the various fields of medicine. New and more effective procedures and processes have created new demands on the physical and mental adaptability of the worker. Therefore one who may have specialized in the field of ophthalmology will have received a certain insulation from the field of general medicine; but he has become, by reason of his special ability, much more intimately exposed to industrial or occupational medicine. He is the one on whom the industrial world will call for solution of its sight and seeing problems, and incidentally these are becoming of greater proportionate significance daily. There is a significant need for medical specialists industrially. Whatever effort is put forth will contribute both directly and indirectly to more than a correction of an isolated condition. Ophthalmologists, like other specialists, can contribute most if they can conceive of industry as a community function and translate their special knowledge in terms comprehensible and useful to the average citizen who works. For these reasons it has been a pleasure to be able to discuss this paper by Dr. Kuhn, for it contains material of more than passing significance.

Dr. E. H. Cary, Dallas, Texas: Dr. Vail raised the point as to what could be done with the undergraduate. The trouble with medical education today is that a vast amount of information is to be given to medical students and we have attempted to give it to them in thirty-two weeks. With all the new knowledge to be presented to medical students, the specialties have been pushed aside. The student must be a well informed man in surgery, medicine, obstetrics and gynecology and what are known as fundamental subjects. In the Southwestern Medical College we recently discussed, and I think we shall put it into effect, a program for extending the medical course to forty weeks for the first year, forty-six weeks for the second year, forty-six weeks for the third year and forty weeks for the senior year. This permits the men who graduate to take their board examinations and enter hospitals as interns. But in extending the course we shall recapture some of the time which is so very much needed and which is so essential to give the specialists an opportunity to give the young medical man a general training which is worth while. Although a technician, such as an optometrist, may be in some instances capable of refracting an eye without having it properly relaxed, I cannot concede that he has the knowledge that is essential to aid accurately the people in industry. I feel that we should adopt a more extensive course, because most of our medical schools have full time teachers as professors and they have had their salaries materially increased as a result of the accelerated program. I take the position that those gentlemen should now take the opportunity to amplify the course in medicine so that it will proceed to the extent of some 178 weeks before graduation instead of 128. Not only will you have a fairly good doctor, a general practitioner, but if you extend the opportunity for the student so that he will have the clinical advantages and the clinical opportunities with the teachers in ophthalmology and other special subjects which we classify as specialties, you will have a well rounded man to go into industry with at least sufficient knowledge to be useful. I do not expect ever to make a real specialist of any man, because I have always known that first a man has to be thoroughly trained through his hospital internship. It may be general practice for some but at least following a wide experience in special hospitals to get special knowledge. However, it would be impossible ever to supply the number of men that have been spoken of this morning through the process which we have always had in mind and always adopted. If we can extend the course as I have outlined, I believe we can supply to industry men who will be far more capable of meeting the issues that might arise and doing it much more satisfactorily for the people who are to be served than we could do it through a program of using technicians.

Dr. Hedwig S. Kuhn, Hammond, Ind.: I want to express gratitude for the support that has been given to the Joint Committee on Industrial Ophthalmology. I report the glad news of progress being made in England and I hope that Sir Stewart Duke-Elder will help us in joining hands to accelerate further the solution of our industrial ophthalmologic problems.

TREATMENT OF TUBERCULOSIS WITH STREPTOMYCIN

A Summary of Observations on One Hundred Cases

H. CORWIN HINSHAW, M.D., Ph.D.
WILLIAM H. FELDMAN, D.V.M.
Rochester, Minn.
and
KARL H. PFUETZE, M.D.
Cannon Falls, Minn.

The search for drugs effective in treatment of tuberculosis has long been under way, but significant progress toward a practical goal was not achieved until the modern era of chemotherapy reawakened interest in the subject. For more than sixty years it has been known that Mycobacterium tuberculosis was readily inhibited when growing in cultures, and a large number of substances have been found which have the property of inhibiting the growth of this organism, even in extremely high dilutions.[1] Until 1940 [2] a substance was not found which was capable of actually arresting experimental tuberculosis in the highly susceptible guinea pig.

The development of methods [3] which were adequate to assay the therapeutic potentialities of antibacterial drugs against experimental tuberculosis has made possible an extensive program of research which has steadily progressed toward attainment of a practical clinical goal. These methods led to the recognition of the sulfone series of synthetic drugs (sodium p,p′-diaminodiphenylsulfone-N,N′didextrose sulfonate, Promin; disodium formaldehyde sulfoxylate, Diasone; 4,2′-diaminodiphenyl-5′-thiazolesulfone, Promizole; 4,4′-diaminodiphenylsulfone and others) which were highly effective in treatment of tuberculosis in experimentally infected animals, but the clinical use of which was not feasible.[4] When these methods of assay were applied to streptomycin, soon after it was developed by Schatz, Bugie and Waksman,[5] its superior therapeutic potentialities were recognized promptly.[6]

We and our associates have been utilizing streptomycin clinically for approximately two years [7] and have treated 100 patients who had various types of tuberculous infection during this period.[8] Several of the patients had tuberculosis of more than one type or at more than one site (see the accompanying table). Streptomycin recently has been made available commercially, and it now appears advisable to record our observations in a widely distributed medical journal. In this paper we shall place emphasis on those types of tuberculosis which are usually treated by physicians and surgeons who do not limit their practice to phthisis.

The clinical use of streptomycin appears to be based on sound laboratory investigation. Observations on guinea pigs [6b] and on mice infected [9] with lethal doses of tubercle bacilli have shown that streptomycin may bring the disease to a state of arrest, even when severe experimental conditions were imposed. Our more recent observations have yielded even more impressive evidence of the striking antibacterial activity of streptomycin in vivo; resolution, fibrosis or calcification of lesions has occurred in all animals and apparent eradication of the infection in at least 30 per cent of the animals. Previously positive reactions to tuberculin tests have been reversed to negative reactions in those animals from whose organs Myco. tuberculosis could not be recovered by the most sensitive bacteriologic methods.

Tuberculosis Treated with Streptomycin: Summary of One Hundred Cases *

Type of Case	Number
Miliary tuberculosis and tuberculous meningitis	12
Nonsurgical pulmonary tuberculosis of adults	32
Ulcerating tuberculous lesions of respiratory tract	7
Tuberculous empyema	7
Tuberculous fistulas	15
Tuberculosis of the genitourinary tract	15
Tuberculosis of bones and joints	5
Surgical pulmonary tuberculosis of adults	7
Miscellaneous types of tuberculosis	11

* Eleven patients had tuberculosis of more than one type or location.

Streptomycin possesses the pharmacologic properties required of a substance to be used in the treatment of a chronic disease,[10] and recent accomplishments of the manufacturers have resulted in more purified and accordingly less toxic preparations than were formerly available. The drug is expensive to produce and difficult to procure in a quantity adequate for the treatment of tuberculosis. The entire output is now allocated by regulations of the Civilian Production Administration, for which Dr. E. O. Haenni is the director of the Drug Section of the Chemicals Division.

MILIARY TUBERCULOSIS AND TUBERCULOUS MENINGITIS

Twelve patients who had generalized hematogenous tuberculosis have been treated with streptomycin. Nine of these presented clinical evidence of meningitis, 2 had focal cerebral lesions of tuberculosis which were demonstrated at necropsy, and 1 had miliary tuberculosis without evidence of involvement of the central nervous system. Six of these 12 patients have died, and observations at necropsy in 5 instances have been

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From the Division of Medicine, Mayo Clinic (Dr. Hinshaw) and the Division of Experimental Medicine, Mayo Foundation (Dr. Feldman).

[1] Wells, H. G.: The Chemotherapy of Tuberculosis, Yale J. Biol. & Med. 4: 611-626 (March) 1932.

[2] Feldman, W. H.; Hinshaw, H. C., and Moses, H. E.: The Effect of Promin (Sodium Salt of Dextrose Sulfonate) on Experimental rt, Proc. Staff Meet., Mayo Clin. 15:

[3] Feldman, W. H., and Testing in Experimental Tuberculosis: ocedures for Testing Antituberculosis ted Animals, Am. Rev. Tuberc. 51:

[4] Hinshaw, H. C.; Feld Present Status of Chemotherapy in Tuberculosis, Ann. Int. Med. 22: 696-703 (May) 1945.

[5] Schatz, A.; Bugie, E., and Waksman, S. A.: Streptomycin, a Substance Exhibiting Antibiotic Activity Against Gram-Positive and Gram-Negative Bacteria, Proc. Soc. Exper. Biol. & Med. 55: 66-69 (Jan.) 1944.

[6] (*a*) Feldman, W. H., and Hinshaw, H. C.: Effects of Streptomycin on Experimental Tuberculosis in Guinea Pigs: A Preliminary Report, Proc. Staff Meet., Mayo Clin. 19: 593-599 (Dec. 27) 1944. (*b*) Feldman, W. H.; Hinshaw, H. C., and Mann, F. C.: Streptomycin in Experimental Tuberculosis, Am. Rev. Tuberc. 52: 269-298 (Oct.) 1945.

[7] Hinshaw, H. C., and Feldman, W. H.: Streptomycin in Treatment of Clinical Tuberculosis: A Preliminary Report, Proc. Staff Meet., Mayo Clin. 20: 313-318 (Sept. 5) 1945.

[8] The streptomycin used in these experimental and clinical studies was derived from several sources. The earliest experimental studies were carried out with material kindly supplied by Dr. S. A. Waksman. Later Drs. Carlisle and Robertson of Merck & Co., Inc., Dr. Hazel of the Abbott Laboratories and Dr. Upjohn of the Upjohn Company made supplies available to us for clinical studies. From March 1, 1946 to Sept. 1, 1946 all supplies were allocated to us through the Committee on Chemotherapeutics and Other Agents of the National Research Council, Dr. Chester S. Keefer, Chairman.

[9] Youmans, G. P., and McCarter, J. C.: Streptomycin in Experimental Tuberculosis: Its Effect on Tuberculosis in Mice Produced by M. Tuberculosis var. Hominis, Am. Rev. Tuberc. 52: 432-439 (Nov.) 1945.

[10] Heilman, D. H.; Heilman, F. R.; Hinshaw, H. C.; Nichols, D. R., and Herrell, W. E.: Streptomycin: Absorption, Diffusion, Excretion and Toxicity, Am. J. M. Sc. 210: 576-584 (Nov.) 1945.

recorded.[11] Five patients who are still living have been observed for periods ranging from two to ten months following the clinical diagnosis. In the remaining case, treatment has been under way for one month only.

Of greatest interest are the 5 surviving patients observed for from two to ten months whose previously progressive disease has been suppressed at least temporarily by streptomycin therapy. One patient who had miliary tuberculosis without meningitis has shown pronounced improvement, both clinically and roentgenographically, after two months of treatment. The other 4 had well developed tuberculous meningitis which gave all the cardinal evidences of this disease, including the usual symptoms (fever, stupor, headache and nuchal rigidity) and the usual abnormalities of the cerebrospinal fluid, which contained demonstrable Myco. tuberculosis. The symptomatic response of these 4 patients to treatment with streptomycin has been sufficiently consistent and prompt to be unmistakable, and the subsequent clinical course has been unlike anything previously observed in this disease in our experience. Symptomatic improvement has usually been observed within one or two weeks after administration of streptomycin was begun; fever has declined within two or three weeks, and the temperature has become normal within four to eight weeks after the initiation of treatment. A return of a sense of well-being and the disappearance of stupor, headache and nuchal rigidity have been associated manifestations. The condition of the cerebrospinal fluid has improved slowly, and some abnormalities have persisted in all patients. Change in the spinal fluid to nearly normal has occurred in 2 patients only. It has been impossible to demonstrate Myco. tuberculosis in the cerebrospinal fluid after several weeks of treatment of these surviving patients. The fact that the cell count or the protein content has remained high or the sugar content of the cerebrospinal fluid has remained low has been interpreted as evidence of possible persistent infection in these patients whose tuberculous meningitis has improved, even though the organisms can no longer be demonstrated by inoculation of guinea pigs or culture. Treatment of 3 patients has been discontinued after the completion of a six months' course of therapy. Two of these patients have remained well for two and three months respectively. Reactivation of the disease of the other patient occurred one month after treatment was stopped; therefore, treatment was resumed. This patient is still alive more than three months after such reactivation and ten months after admission, but actual recovery appears improbable. The life of these patients undoubtedly has been prolonged for at least several months, and the distressing symptoms of tuberculous meningitis have been relieved; but much more time must elapse before any of these patients will be classified as cured.

Residual neurologic disturbances are present in 3 of the 4 patients with arrested tuberculous meningitis. One patient is blind, and we believe that the blindness was caused by tuberculous retrobulbar neuritis. One patient is deaf, and there is a question whether the deafness is due to the streptomycin. The third patient has profound disturbances of cerebellar function. The remaining patient is clinically well, ambulatory and free of all symptoms but is still receiving treatment five months after admission, with severe symptoms of early tuberculous meningitis.

One case of tuberculous meningitis arrested by treatment with streptomycin has been reported,[12] and we know of at least 6 other similar cases which have been reported to us by personal communication from various institutions.

The treatment of 4 patients has consisted of the intrathecal administration, by lumbar or cisternal puncture, of 100 to 200 mg. of streptomycin every twenty-four to forty-eight hours for two to six weeks. In addition, these patients received 2 to 3 Gm. of the substance daily by intramuscular injection, and this regimen has been continued for six months in the treatment of those who have been under observation for this long time. None of the patients who died had received intrathecal therapy, and none of those who received intrathecal therapy have died thus far. The clinical histories and observations at necropsy in those patients who died are discussed in another publication.[11]

In tuberculous meningitis maximal doses of streptomycin should be given both parenterally and intrathecally for prolonged periods. Frequently such treatment produces temporary clinical improvement which will persist for at least several weeks or months.

For miliary tuberculosis, early diagnosis and persistent treatment with maximal tolerated doses given parenterally should be undertaken. Clinical, roentgenographic and histopathologic evidences of healing trends have been observed, but actual cure has not yet been witnessed in our experience.

NONSURGICAL PULMONARY TUBERCULOSIS OF ADULTS

A total of 32 patients who have had pulmonary tuberculosis have been treated by us with streptomycin since December 1944. Patients with active, usually progressive cases of pulmonary tuberculosis in which we and our clinical associates[13] were of the opinion that rapid spontaneous improvement was unlikely to occur were selected for treatment with streptomycin. Cases in which nonspecific therapeutic measures or collapse therapy might contribute to the recovery of the patient were excluded from the series. Furthermore, cases in which surgical operation was employed were not included.

Of the 32 patients on whom operation was not performed, the pulmonary tuberculosis had reached a far advanced stage of development in 21, was moderately advanced in 9 and was minimal in 2 before treatment with streptomycin was begun. Constitutional symptoms such as fever, cough and loss of weight were moderate to severe in 27 patients. After treatment for from two to six months with 1 to 3 Gm. of the drug a day, definite roentgenographic improvement was observed in 25 patients, despite the unfavorable trends observed prior to treatment. Evidence that pulmonary cavities had closed was observed in 12 patients, apparently as a result of treatment; thick walled cavities persisted in 6 patients despite treatment, and in the rest cavitation was not demonstrable. Myco. tuberculosis disappeared from the sputum of 13 patients; in each of these instances this fact was proved either by culture or by inoculation of guinea pigs with aspirated gastric contents.

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[11] Baggenstoss, A. H.; Feldman, W. H., and Hinshaw H. C.: The Effect of Streptomycin on the Pathology of Generalized Miliary Tuberculosis of Human Beings, Am. Rev. Tuberc., to be published.

[12] Cooke, R. E.; Dunphy, D. L., and Blake, F. G.: Streptomycin in Tuberculous Meningitis: A Report of Its Use in a One-Year-Old Infant, Yale J. Biol. & Med. **18**: 221-226 (Jan.) 1946.

[13] Drs. H. J. Moersch, O. T. Clagett, H. G. Wood, H. W. Schmidt, A. M. Olsen and D. T. Carr of the Mayo Clinic, Dr. Magnus Petersen of the Rochester State Hospital and Dr. H. A. Burns of the Division of Public Institutions of the State of Minnesota have cooperated in the care of these patients.

Myco. tuberculosis continued to be found in the sputum of 15 patients with far advanced tuberculosis despite prolonged treatment, and in the remaining 4 patients the organisms were never demonstrated in the sputum, although the diagnosis of tuberculosis was undoubtedly correct.

Lesions of pulmonary tuberculosis were not observed to progress roentgenographically during treatment with streptomycin even in those cases which terminated fatally, with the exception of 1 instance mentioned hereafter of recurrent tuberculosis due to a drug-resistant strain of Myco. tuberculosis. In 7 cases the disease was classified as unimproved. Without exception these patients had far advanced lesions of long standing, thick-walled cavities and fibrocaseous lesions, which probably would not respond to any antibacterial therapy. Some of these 7 patients were subjectively improved, but this change frequently could be attributed to improvement in morale incident to alteration of treatment.

Reactivation of the disease attending discontinuation of treatment with streptomycin has been observed in 6 instances. Two of the patients promptly improved again when treatment was resumed, 1 failed to improve when a second course of treatment was given, and the remaining 3 did not receive further treatment with streptomycin. It appeared that the persistence of the organism in the sputum, uncollapsed cavities, emaciation and low natural resistance predisposed the patients to a recurrence of the disease after the discontinuation of treatment.

Five patients of this series who had pulmonary tuberculosis have died. Two received streptomycin until the end, and the other 3 did not have treatment during their last few months. Each of these patients had terminal, far advanced disease with involvement of the greater part of both lungs and was in an advanced stage of cachexia when treatment with streptomycin was instituted. There was temporary improvement for a few weeks in 2 of these patients, and in 2 the disease did not advance. The remaining case was of unusual interest because well defined improvement in the patient had occurred during a six months' course of treatment; reactivation of the disease took place four months later, and a streptomycin-resistant strain of Myco. tuberculosis was isolated. Despite a second course of treatment under these conditions, the disease followed a rapidly progressive course, due perhaps to an acquired resistance to streptomycin on the part of the infecting organisms.

In the selection of patients with pulmonary tuberculosis for treatment with streptomycin, preference should be given to those patients with progressive disease who cannot be treated effectively by conventional methods. Priority also should be given to those patients whose disease appears to be of such a character that it might be brought under permanent control with a few months of suppressive treatment with or without surgical intervention.

ULCERATING TUBERCULOUS LESIONS OF THE RESPIRATORY TRACT

Ulcerating tuberculous lesions of the respiratory passages, including the larynx,[14] hypopharynx, trachea and large bronchi, have been treated in 7 cases. Observations are still incomplete in 2 cases, but in the remaining 5 prompt improvement of the patients was observed and recurrences have not been noted, although treatment has been completed for a year or more in 4 cases.

TUBERCULOUS EMPYEMA

Seven patients with tuberculous empyema of long standing have been treated with streptomycin. Four of these were given the preparation intrapleurally only, and improvement was not observed beyond that which might be anticipated had lavage alone been employed. Three patients received treatment by both intrapleural and intramuscular routes, and only 1 of these improved unmistakably. In 1942, this 1 patient had required open thoracotomy with resection of three ribs and intercostal muscles for drainage of tuberculous empyema with mixed infection and large bronchopleural fistula. It was possible to apply the streptomycin to the pleural surfaces several times a day by means of an atomizer, and, in addition, large doses were given intramuscularly. The bronchopleural fistula closed promptly, and Myco. tuberculosis disappeared from the empyemic cavity after three months of treatment. This patient had been under observation for four years previously, and improvement had not occurred despite persistent treatment of several types.

It is surprising that the antibacterial effects of streptomycin are not more clearly shown in the treatment of tuberculous empyema, but this may be due to the fact that the pus of tuberculous empyema is usually acid in reaction, while streptomycin is much more active in neutral or alkaline solutions. Also, it should be recalled that tuberculous empyema is a granulomatous process and not a simple growth of bacilli in the empyemic fluid.

TUBERCULOUS FISTULAS

Fifteen patients with cutaneous fistulas from which purulent material containing Myco. tuberculosis drained have been treated with streptomycin. One of these had multiple lesions which involved the supraclavicular lymph nodes, the inguinal lymph nodes and the chest wall. Lesions were limited to the cervical and axillary lymph nodes in 6 patients, to the thoracic wall in 2, to the abdominal wall in 1 and to the scrotum in 2. Two patients had tuberculosis of the bones of the wrist, with draining sinuses, and 1 had a tuberculous infection of a wound in the scalp following craniotomy for tuberculoma of the brain. In the patient with tuberculoma of the brain, treatment with streptomycin was continued for six weeks only. Temporary neurologic improvement resulted, but this may have been due to the decompression operation. This patient died elsewhere six months later.

In each of the 15 patients a response to therapy has been observed within four to six weeks; this response was evidenced by the cessation of purulent drainage. If treatment was suspended at this stage of improvement, a tendency toward prompt spontaneous reactivation of the process was observed. When treatment was continued for several weeks after complete superficial healing had been accomplished, an indefinitely long remission of the disease has usually been observed. In 10 of the 15 patients the fistulas have healed and have remained closed for periods of four to twelve months, in 3 patients recurrent fistulas remain, and in 2 patients recent healing has occurred, but treatment is still under way. In order to achieve complete and prolonged healing of such lesions the administration of 2 Gm. of streptomycin per day for at least three or four months is recommended as an average dosage.

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[14] Figi, F. A.; Hinshaw, H. C., and Feldman, W. H.: Treatment of Tuberculosis of the Larynx with Streptomycin: Report of Case, Proc. Staff Meet., Mayo Clin. **21**: 127-130 (March 20) 1946.

Streptomycin has appeared to facilitate the healing of previously refractory tuberculous fistulous tracts, especially those due to tuberculosis of the chest wall and tuberculous lymphadenitis. Treatment should be continued for several weeks after purulent drainage ceases in order to reduce the possibility of recurrence.

TUBERCULOSIS OF THE GENITOURINARY TRACT

The experience of our group in treatment of tuberculosis of the genitourinary tract has been recorded elsewhere,[15] and further observations on a total of 15 cases have confirmed the conclusion that streptomycin possesses some palliative value in the majority of cases of tuberculous cystitis and may bring the disease to a state of temporary arrest in a small minority of cases. Streptomycin is not curative of renal tuberculosis, in our opinion. More impressive symptomatic results might have been realized in cases of tuberculous cystitis had earlier cases been chosen in which there were less advanced fibrotic changes in the bladder wall.

In the types of cases chosen we have observed a decided tendency to recurrence of tuberculous bacilluria, even after the urine had been proved free of Myco. tuberculosis by the results of inoculation of guinea pigs. When the organisms reappear in the urine after prolonged treatment with streptomycin, they are likely to be resistant to the effects of the drug in vitro. Amelioration of symptoms, which has been observed in at least 50 per cent of the 15 cases, frequently has been prolonged. Two patients who were first treated more than eighteen months ago continue to experience considerable symptomatic relief, even though small numbers of Myco. tuberculosis occasionally appear in the urine.

Two of this group of 15 patients had fistulas of the scrotum from which pus containing bacilli related to tuberculous epididymitis drained. In each of the 2 these fistulas closed within a few weeks after the institution of treatment with streptomycin and have remained healed for six and ten months, respectively, after the discontinuation of treatment.

Patients with tuberculous cystitis are frequently improved at least temporarily by the use of streptomycin. The actual arrest of renal tuberculosis has rarely, if ever, been achieved by this treatment. Streptomycin therapy, therefore, cannot be regarded as a substitute for the surgical treatment of unilateral renal tuberculosis at this time.

TUBERCULOSIS OF BONES AND JOINTS

Tuberculosis of bones and joints has been treated in 5 cases. Observations are incomplete in 1 case because the patient is still under treatment. Apparent response of the patients to treatment has been noted, however, in the remaining 4 cases, which will be reported in collaboration with our associates in orthopedic surgery.

SURGICAL PULMONARY TUBERCULOSIS OF ADULTS

Streptomycin was combined with radical surgical measures in treatment of 7 patients who had pulmonary tuberculosis. The streptomycin was given both preoperatively and postoperatively; in some cases the main reason for postoperative administration of streptomycin was to combat postoperative tuberculous complications. It is believed that the drug contributed substantially to the recovery of the patients, and a more detailed report of the cases will be published with colleagues of ours who perform thoracic surgery.

MISCELLANEOUS TYPES OF TUBERCULOSIS

Because of the pronounced tendency to spontaneous healing of primary tuberculosis, it is difficult to evaluate the results of treatment in the 2 cases of primary pulmonary tuberculosis of childhood which were included in this series. One of these cases has already been mentioned, and enumerated, as an instance of tuberculous meningitis.

Tuberculosis of the peritoneum has been treated in 3 cases with apparently good results. Recent surgical treatment may have contributed to the recovery in 1 case. Tuberculous pericarditis also was present in 1 of these cases of peritoneal involvement and persistent postoperative tuberculous infection of the wound was treated with streptomycin; drainage ceased and systemic improvement occurred.

Three patients who had lupus vulgaris and 1 who had sarcoidosis were treated with streptomycin. Good results were obtained in 1 patient with lupus, and questionable improvement occurred in the remainder. These cases will be reported in more detail by our associates in dermatology.[16]

Three patients are being treated for ocular tuberculosis by our associates in ophthalmology, and results are not as yet fully evaluated.

DOSAGE, METHODS OF ADMINISTRATION AND TOXICITY OF STREPTOMYCIN

The dosage of streptomycin which we recommend at this time for treatment of tuberculosis of adults is from 1 to 3 Gm. per twenty-four hours. This quantity is divided into four or six doses, one of which is administered every four or six hours by deep subcutaneous or intramuscular injection. The solution for parenteral administration may contain from 100 to 250 mg. of streptomycin per cubic centimeter. Sterile water is the diluent of choice. Solutions containing 25 to 100 mg. per cubic centimeter may be employed topically, intrabronchially or in an aerosol spray. In the treatment of tuberculous meningitis, intrathecal injections of from 100 to 200 mg. of streptomycin dissolved in 1 to 5 cc. of cerebrospinal fluid or isotonic solution of sodium chloride are given every twenty-four to forty-eight hours by lumbar or cisternal puncture.

Treatment of ulcerating tuberculous lesions of the hypopharynx, larynx, trachea and bronchi may include both parenteral and aerosol treatment with streptomycin. The aerosol has been administered by means of a nebulizer in a manner similar to that employed in bronchiectasis.[17] For this, 20 cc. of isotonic solution of sodium chloride which contains 0.5 Gm. of streptomycin is used; 2 cc. is nebulized into the mouth each hour for ten hours of the day.

Treatment with streptomycin for prolonged periods, as is required for tuberculosis, has produced reactions

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[15] Cook, E. N.; Greene, L. F., and Hinshaw, H. C.: Streptomycin in the Treatment of Tuberculosis of the Urinary Tract, Proc. Staff Meet., Mayo Clin. **21**: 277-280 (July 24) 1946.

[16] O'Leary, P. A.; Ceder, E. T.; Hinshaw, H. C., and Feldman, W. H.: The Treatment of Various Types of Cutaneous Tuberculosis with Promizole and with Streptomycin: A Preliminary Report, Arch. Dermat. & Syph., to be published.

[17] Olsen, A. M.: Nebulized Penicillin: Preliminary Report of Its Role in the Management of Surgical Bronchiectasis, Proc. Staff Meet., Mayo Clin. **20**: 184-194 (June 13) 1945.

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Because of the pronounced tendency to spontaneous healing of primary tuberculosis, it is difficult to evaluate the results of treatment in the 2 cases of primary pulmonary tuberculosis of childhood which were included in this series. One of these cases has already been mentioned, and enumerated, as an instance of tuberculous meningitis.

Tuberculosis of the peritoneum has been treated in 3 cases with apparently good results. Recent surgical treatment may have contributed to the recovery in 1 case. Tuberculous pericarditis also was present in 1 of these cases of peritoneal involvement and persistent postoperative tuberculous infection of the wound was treated with streptomycin; drainage ceased and systemic improvement occurred.

Three patients who had lupus vulgaris and 1 who had sarcoidosis were treated with streptomycin. Good results were obtained in 1 patient with lupus, and questionable improvement occurred in the remainder. These cases will be reported in more detail by our associates in dermatology.[16]

Three patients are being treated for ocular tuberculosis by our associates in ophthalmology, and results are not as yet fully evaluated.

DOSAGE, METHODS OF ADMINISTRATION AND TOXICITY OF STREPTOMYCIN

The dosage of streptomycin which we recommend at this time for treatment of tuberculosis of adults is from 1 to 3 Gm. per twenty-four hours. This quantity is divided into four or six doses, one of which is administered every four or six hours by deep subcutaneous or intramuscular injection. The solution for parenteral administration may contain from 100 to 250 mg. of streptomycin per cubic centimeter. Sterile water is the diluent of choice. Solutions containing 25 to 100 mg. per cubic centimeter may be employed topically, intrabronchially or in an aerosol spray. In the treatment of tuberculous meningitis, intrathecal injections of from 100 to 200 mg. of streptomycin dissolved in 1 to 5 cc. of cerebrospinal fluid or isotonic solution of sodium chloride are given every twenty-four to forty-eight hours by lumbar or cisternal puncture.

Treatment of ulcerating tuberculous lesions of the hypopharynx, larynx, trachea and bronchi may include both parenteral and aerosol treatment with streptomycin. The aerosol has been administered by means of a nebulizer in a manner similar to that employed in bronchiectasis.[17] For this, 20 cc. of isotonic solution of sodium chloride which contains 0.5 Gm. of streptomycin is used; 2 cc. is nebulized into the mouth each hour for ten hours of the day.

Treatment with streptomycin for prolonged periods, as is required for tuberculosis, has produced reactions which, although incompletely understood, must be anticipated. These are of sufficient severity that treatment with streptomycin frequently should be denied to patients for whom the prognosis from conventional therapy is good. These reactions, however, are sufficiently mild to be disregarded in cases of progressive tuberculosis which is not amenable to other forms of treatment. The most frequent and uncomfortable reaction observed in our experience is disturbance of equilibrium. Effective compensation for this disturbance may occur, with eventual disappearance of symptoms. However, evidence of permanent neurologic abnormality frequently persists in the form of a diminished response to caloric stimulation of the vestibular apparatus.[18] We do not recommend that treatment be discontinued when disturbance of equilibrium is observed, for experience has shown that compensation occurs even though treatment is prolonged.

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[15] Cook, E. N.; Greene, L. F., and Hinshaw, H. C.: Streptomycin in the Treatment of Tuberculosis of the Urinary Tract, Proc. Staff Meet., Mayo Clin. **21**: 277-280 (July 24) 1946.

[16] O'Leary, P. A.; Ceder, E. T.; Hinshaw, H. C., and Feldman, W. H.: The Treatment of Various Types of Cutaneous Tuberculosis with Promizole and with Streptomycin: A Preliminary Report, Arch. Dermat. & Syph., to be published.

[17] Olsen, A. M.: Nebulized Penicillin: Preliminary Report of Its Role in the Management of Surgical Bronchiectasis, Proc. Staff Meet., Mayo Clin. **20**: 184-194 (June 13) 1945.

Other toxic manifestations previously described may be due to impurities in the streptomycin. Irritation at the site of injection is widely variable and inversely proportional to the purity of the product. Renal damage is not likely to occur, but until clinical studies on the prolonged use of purified preparations of streptomycin have been completed, it is recommended that renal function be observed closely. Histamine-like reactions are definitely caused by impurities and do not occur with preparations now available.

LIMITATIONS OF STREPTOMYCIN IN TUBERCULOSIS

It is wise to recognize as clearly as possible the limitations which are imposed on the treatment of clinical tuberculosis by chemotherapeutic and antibiotic agents and, especially, to emphasize the limitations and shortcomings of streptomycin. Unfortunately, tuberculosis in human beings pursues an insidious course; often it does not produce symptoms until irreversible destructive changes have been wrought in the tissues. The mechanical handicaps to healing brought about by the destructive and reparative forces involved frequently require surgical correction, and many forms of localized tuberculous infection have become primarily surgical diseases. It appears illogical to anticipate that the use of any antibacterial preparation could replace the surgical treatment of such lesions. It is more logical to anticipate that a bacteriostatic substance would widen the indications for surgical treatment if it will suppress the unfortunate trend toward rekindling of the infection produced by surgical manipulation of tuberculous tissues. Actual healing in tuberculosis must be accomplished by the slow processes of resorption, fibrosis and calcification, and the role of an antibacterial drug is that of blocking the paths for extension of the disease while these healing forces are operating.

Problems incident to the acquisition by Myco. tuberculosis of resistance to the effects of streptomycin loom large at this time. It appears that the metabolic block in bacterial metabolism produced by streptomycin is more easily overcome by all organisms susceptible to the antibacterial effects of this substance than is the block produced by other known antibacterial agents on organisms susceptible to them. This fact accentuates the importance of devising alternative methods of attack against the organism, to be brought into play when the effectiveness of streptomycin has been exhausted.

Experimental[19] and clinical evidence indicates that there is some limitation as to the duration of therapeutic effect in those instances in which the bacillus develops an acquired resistance to streptomycin. The duration of action of the drug is variable but is sufficiently prolonged to accomplish a favorable result in many clinical situations.

SUMMARY

Streptomycin is an antibacterial agent which possesses the unique ability to inhibit the growth of Mycobacterium tuberculosis in vivo, both experimentally and clinically. The manifestations of tuberculosis may be suppressed both in experimental animals and in man, with at least temporary retardation of the pathologic processes as judged by objective criteria.

In many instances streptomycin appears to suppress tuberculosis rather than to eradicate it, being apparently bacteriostatic rather than completely bactericidal in the concentrations which can be obtained in the tissues.

Streptomycin is recommended for more extensive trial in treatment of many forms of pulmonary and extrapulmonary tuberculosis because of definitely and consistently encouraging results attendant on its use in a series of 100 cases in the past two years.

Treatment of tuberculosis requires large doses of streptomycin (1 to 3 Gm. a day) for prolonged periods and should not be undertaken unless adequate amounts are likely to be available to complete a course of at least two to four months' duration (total requirements up to 360 Gm.).

Toxic manifestations should be anticipated in a majority of patients in whom such prolonged treatment is carried out. Disturbance of equilibrium is especially likely to occur and often persists for at least several weeks after the discontinuation of streptomycin therapy.

Treatment with this antibiotic should be postponed or denied to those tuberculous patients who are making satisfactory progress and who are likely to achieve the arrest of their disease as a result of conventional therapeutic methods. Streptomycin is not to be regarded as a substitute for other and proved effective forms of treatment of tuberculosis.

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[18] Brown, H. A., and Hinshaw, H. C.: Toxic Reaction of Streptomycin on the Eighth Nerve Apparatus, Proc. Staff Meet., Mayo Clin. **21:** *347-352 (Sept. 4) 1946.*

[19] Youmans, G. P.; Williston, E. H.; Feldman, W. H., and Hinshaw, H. C.: Increase in Resistance of Tubercle Bacilli to Streptomycin: A Preliminary Report, Proc. Staff Meet., Mayo Clin. **21:** 126-127 (March 20) 1946.

Letters of Benjamin Rush.—Toward the end of May 1943 there opened at the best known auction house in New York a remarkable sale of American historical manuscripts. This was the sale of the Alexander Biddle Papers. . . . Alexander Biddle had married Julia Wilmer Rush, who brought with her a large segment of the papers of her grandfather Dr. Benjamin Rush. Some 400 lots in the sale consisted of letters to Rush from such friends as John Abigail and John Nathanael Greene, John Jay, Thomas Jefferson, Thaddeus Kosciuszko, Charles Lee, James Madison, James Monroe, Thomas Paine, David Rittenhouse, Anthony Wayne and John Witherspoon. The letters of all those named have always, for good reasons, been eagerly sought by collectors and institutions. The first among the approximately 125 Rush letters in the sale went for $100 or more apiece, some later ones went for $200 or more, and two of them—I am sorry to say they describe quarrels with other physicians—sold for over $300. After some study of the matter I am prepared to say they were worth the prices paid.—Butterfield, L. H.: Benjamin Rush: A Physician As Seen In His Letters, *Bull. Inst. Hist. Med.*, July 1946.

Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association
and Hygeia, the Health Magazine
Chicago

(Continued from page 701)

(Note.—*Following is the fourth chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of The Journal. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in The Journal. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—Ed.)

CHAPTER 4. *The Principles of Medical Ethics*

Among the resolutions introduced in the National Medical Convention which assembled in New York in May 1846 was one which was to set a pattern of ideals for all the years that have followed. It read:

> that it is expedient that the medical profession in the United States should be governed by the same code of medical ethics, and that a committee of seven be appointed to report a code for that purpose at a meeting to be held in Philadelphia on the first Wednesday of May 1847.

The committee included Drs. John Bell, Isaac Hays and G. Emerson, Philadelphia; W. W. Morris, Dover, Del.; T. C. Dunn, Newport, R. I.; A. Clark, New York, and R. D. Arnold, Savannah, Ga. This committee presented its report on June 5, 1847 at Philadelphia.

In presenting the report Dr. Isaac Hays stated that justice required that some explanatory remarks should accompany it. The committee had examined a great number of codes of ethics adopted by different societies in the United States and found that they were all based on that of Dr. Thomas Percival and that, moreover, the phrases of this writer were preserved to a considerable extent in all of them. "Believing that language which had been so often examined and adopted must possess the greatest of merits for such a document as the present, clearness and precision, and having no ambition for the honours of authorship, the Committee which prepared this code have followed a similar course and have carefully preserved the words of Percival wherever they convey the precepts it is wished to inculcate. A few of the sections are in the words of the late Dr. Rush, and one or two sentences are from other writers." The committee said, however, that wherever it was thought that the language could be made more explicit by changing a word or even a part of a sentence, this was unhesitatingly done.

Dr. John Bell was a Philadelphia surgeon, graduated by the University of Pennsylvania in 1817. He had done good work as a writer and editor and had been associated with the production of a considerable number of books. He had also edited "Stokes' Lectures on the Theory and Practice of Physics" and Andrew Combe's "Treatise on Children." It is generally conceded that most of the work in the preparation of these principles of ethics had been done by Isaac Hays, editor of the *American Journal of the Medical Sciences* from 1827 to 1879.

Thomas Percival, from whom admittedly the committee drew extensively in preparing the first draft of the principles of ethics, was a graduate of Leyden in 1765 and was made a Fellow of the Royal Society of England in 1765 when he was 25 years old. In 1767, when he was 27 years old, Thomas Percival published a book of philosophic essays and commentaries on medical life. He conducted an extensive correspondence with John Hunter and William Withering, the latter the discoverer of the use of digitalis, and with Heberden, for whom the famous nodes are named. He was associated with Charles White, who unquestionably knew about the infectiousness of puerperal fever and who wrote important works on the subject before Semmelweis and Oliver Wendell Holmes. Thomas Percival gave much thought to the future of the medical profession. An argument started in the hospital in which he worked. This no doubt led to the codification of the principles which were the first formal code of ethics submitted to the English medical profession. In 1793 Percival was asked by the group associated with the Manchester Infirmary to draw up a series of ethical principles as a guide in the conduct of the hospital and of the infirmary. He worked three years, then drew a first draft which he circulated among his friends, including Charles White, Heberden, John Hunter and William Withering. He sent a copy also to Erasmus Darwin. All sent him their comments. Then he revised the manuscript and finally published it in 1803.

In 1823 the New York State Medical Society adopted a series of principles of ethics which were almost wholly similar to the code prepared by Thomas Percival. In 1832 the Baltimore Medical Society took Percival's series and adopted them for that society. When Isaac Hays presented the report of his committee to the convention of 1847, he too, as has already been noted, decided that little improvement could be made on the principles as set forth by Thomas Percival.

In the work "American Medical Biographies," by Howard A. Kelly and Walter L. Burrage, it is said that the name of Isaac Hays is always associated with that which is well written and worth reading in American medical literature. After graduation from the University of Pennsylvania in 1816 his father put Isaac Hays into his counting house, but one year of banking proved to be enough. Hays took up the study of medicine under Dr. Nathaniel Chapman, among the first of the presidents of the American Medical Association. In 1820 Hays took his M.D. at the University of Pennsylvania with a thesis on the subject of sympathy. Hays gained celebrity in surgery of the eye; he edited several books on diseases of the eye, physics and ornithology, and cooperated in the preparation of a dictionary of medical terms. He translated several important works of medicine from French into English and he began an American Cyclopedia of Practical Medicine and Surgery but got only as far as "A to Azygos." In 1833 he had published a work entitled

"Descriptions of the Inferior Maxillary Bones of the Mastodons" and he recorded the first case of astigmatism recorded in America.

In presenting the Code of Medical Ethics to the convention, a statement was made by Dr. John Bell in which he pointed out that medical ethics comprised not only the duties but also the rights of a physician. "As it is the duty of a physician to advise, so has he a right to be attentively and respectfully listened to." His introductory statement, after emphasizing the dignity of the medical profession, calls on the physician to give of his utmost for the advancement of the public health and the sustaining of the law. He recognizes the obligation on the physician "to bear emphatic testimony against quackery in all its forms." Even as early as 1847 he recognized the dangers of insanitary food and the purveying of nostrums. He did not hesitate to condemn members of other professions, and especially ministers of the gospel, for giving "their countenance and at times direct patronage to medical empirics both by their use of nostrums and by their certificates in favor of the absurd pretentions of these impostors." He condemned also the apothecaries who lend themselves to the sale and distribution of quack medicines and nostrums. And the final portion of his address is a plea to maintain the standards of the profession by unceasing vigilance so as to prevent the introduction of those who have not been prepared by a suitable preparatory moral and intellectual training.

In a volume called "Percival's Medical Ethics," Chauncey D. Leake has analyzed the growth and development of the "Principles of Medical Ethics of the American Medical Association." The criticism was made early that the committee headed by Bell and Hays had taken its code directly from the New York State code. However, as has already been pointed out, Isaac Hays stated clearly that the code had been derived from that of Percival and thus neatly reprimanded the New York and Baltimore societies, which adopted these codes without giving credit to Percival.

From time to time after 1848, circumstances developed which made necessary reconsiderations and modifications of the Principles of Ethics. In 1852 there was serious debate over the acceptance of homeopathic doctrines by some members of the medical profession. In 1882 delegates from the Medical Society of the State of New York presented a report which offered a simplified and brief system of medical ethics as a substitute for the national code. This was adopted. Then in June 1882, at the meeting of the American Medical Association in St. Paul, delegates from the Medical Society of the State of New York were refused admission. At that time Dr. Austin Flint wrote a commentary on the Code of Ethics in an endeavor to persuade the New York society to reenact the code of the American Medical Association. So fierce was this battle that a group was formed with the title "Society for the Prevention of the Reenactment in the State of New York of the Present Code of Ethics of the American Medical Association." The battle continued with pamphleteering, debate and discussion on both sides. At various meetings of the Medical Society of the State of New York the Code was voted in and voted out, and at one time a conservative group which found it impossible to reenact the national code in the original Medical Society of the State of New York withdrew and organized a rival New York State Medical Association.

Finally, in 1903 a special committee appointed by the American Medical Association made a report at the convention in New Orleans to which one of its members dissented. That member prepared what he considered to be a "suitable system of advisory precepts" in medical conduct. This was adopted as "The Principles of Ethics of the American Medical Association" and was considered to be much more satisfactory than the older code. Still further revisions were made in 1912.

A resolution passed by the House of Delegates of the American Medical Association in San Francisco in 1946 has called on the Judicial Council of the American Medical Association to consider again a rewriting and rephrasing of "The Principles of Medical Ethics."

The chief criticism made by Chauncey D. Leake in his consideration of the subject is the one which has been made frequently, namely that "The Principles of Medical Ethics" do not clearly differentiate actual principles of ethics from the rules of conduct and etiquette of the profession. Indeed, one rather wise commentator in the midst of the battle that was waged in New York, Dr. D. B. St. John Roosa, suggested that the only ethical offenses for which the medical profession should claim and promise to exercise discipline are "those comprehended under the commission of acts unworthy a physician and a gentleman."

The "Principles of Ethics" that now prevail emphasize first the duties of the physician to his patient. These duties include service as an ideal, patience and delicacy as highly desirable qualifications and full assumption of responsibility once a case has been undertaken. The "Principles of Ethics" emphasize that the physician is free to choose whom he will serve but point out that he should respond to any request for assistance in emergencies or whenever temperate public opinion expects the service.

The physician is told that he must be an honorable man and a gentleman and that he must conform to a high standard of morals and uphold the dignity of his profession. The solicitation of patients by an individual physician is considered unprofessional, but it is recognized that a man may conform to the customs of the community in which he lives.

Medicine has for years depended for its success on the personal relationship between physician and patient. Every article in the principle of ethics is planned to emphasize this relationship. "A pleased patient," as the "Principles of Ethics" repeatedly state, "is the best type of medical advertisement." From the very first the "Principles of Ethics" have sought to protect an uninformed public against the claims of the quack and the pretender. "It is unprofessional to promise radical cures; to boast of cures and secret methods of treatment and remedies; to exhibit certificates of skill or of success in the treatment of disease; or to employ any methods to gain the attention of the public for the purpose of obtaining patients."

Again the "Principles of Ethics" recognized the importance of having adequate consultation whenever a physician is in doubt as to what is best for his patient. "In serious illness, especially in doubtful or difficult conditions, the physician should request consultations." And, the principles continue, "In every consultation the benefit to be derived by the patient is of first importance." The "Principles of Ethics" recognize that medical diagnosis is usually paid for insufficiently in comparison with the rewards of surgical technic. "The patient should be made to realize," say the "Principles of Ethics," "that a proper fee should be paid the family physician for the service he renders in determining the surgical or medical treatment suited to the condition, and in advising concerning those best qualified to render any special service that may be required by the patient."

THE DOCTOR AND THE PUBLIC

The third phase of the principles of ethics is again a recognition of the duty of the physician to the public. He is asked to remember that he is a citizen and to aid in enforcing laws and in giving advice concerning public health. During an epidemic he must continue his labors for the alleviation of the suffering without regard to the risk of his own health or life or to financial return. He is asked to warn the public against the devices practiced and the false pretensions made by charlatans, and he is told finally that these principles do not cover all the obligations which he may have but are wholly a guide which will supplement the ordinary conduct of a gentleman and the practice of the Golden Rule. The last sentence reads "Finally, these principles are primarily for the good of the public, and their enforcement should be conducted in such a manner as shall deserve and receive the endorsement of the community."

(To be continued)

Clinical Notes, Suggestions and New Instruments

APPARENT SENSITIVITY TO AMIGEN

HAROLD J. HARRIS, M.D.
ONSLOW A. GORDON, M.D.
ROBERT GRAY, M.D.
Westport, N. Y.
and
LYMAN G. BARTON, M.D.
Plattsburg, N. Y.

A girl aged 17 took approximately 125 grains (8.1 Gm.) of phenobarbital with suicidal intent on Aug. 15, 1946. Coma rapidly ensued. She had successfully fought off attempts at lavage. There was temporary response to dextrose given by the intravenous drip method, but a fatal outcome still seemed likely on the fourth day of coma. Dosages of picrotoxin and caffeine were of questionable value. The blood pressure ranged from 100 systolic and 60 diastolic to 120 systolic and 70 diastolic, the temperature from 101 to 103 F. and the pulse rate from 120 to 140 per minute. Complete blood counts were not especially informative.

The administration of amigen[1] 5 per cent in 5 per cent dextrose was begun by the slow intravenous drip method on the evening of the fourth day. By the time that approximately 100 cc. of the solution had been administered, a chill occurred. The intravenous drip medication was discontinued. The temperature rose rapidly to 105.8 F. and the pulse rate rose to 164 or higher. The application of cold wet packs and the use of ice water enemas were followed by a gradual decline of the temperature to 103 F., at which point these measures were discontinued. Shock ensued, with an irregular thready pulse and a steady fall of the blood pressure to 70 systolic and zero diastolic. At that point the pulse could not be felt.

Epinephrine hydrochloride given intramuscularly resulted in a temporary response, the heart action becoming audible and a thready irregular pulse at the rate of 160 per minute being reestablished. Additional amounts of epinephrine and caffeine and sodium benzoate did not give further response. The respirations were extremely shallow and gasping. The extremities were cold, blue and mottled. Nikethamide (Coramine, pyridine-*B*-carboxylic acid diethylamide) was administered intravenously in doses of 5.0 cc. each when a fatal termination seemed inevitable. By the time about 1.0 cc. of Nikethamide had been given, concomitantly with the initiation of intravenous drip of 10 per cent dextrose in distilled water, the respirations became deeper and less labored. Improvement in the pulse rate and blood pressure was rapid. Additional Nikethamide was given intramuscularly in doses of 5.0 cc. to 6.0 cc. at irregular intervals, whenever respirations became embarrassed.

From that time on improvement was steady. Partial return to consciousness followed in about forty-eight hours, and speech returned slowly, in typical fashion, with long intervals of semicomatose states.

Radiographs taken at the bedside showed increased density in areas roughly corresponding to the upper and lower lobes of the right lung. Breath sounds were slightly increased in pitch, but other physical signs of a pneumonic process were lacking. Penicillin, 25,000 units every three hours, had been given intramuscularly since the second day of the coma as a precaution against possible infection of the respiratory tract. It is probable that the growth of any pathogenic organisms was prevented by this measure. The temperature slowly defervesced. Subsequent to the patient's recovery from the collapse which followed the use of amigen, respirations were never suggestive of an infectious pneumonic process. Mucus had been coughed up or aspirated in profuse quantities from the onset of coma, at first blood-tinged, then frothy and finally purulent. It was felt that this bronchorrhea was the cause of the physical and radiographic observations. The term "bronchorrheic pneumonia" is proposed to distinguish this type, probably of common occurrence in barbiturate poisoning, from "aspiration" pneumonia, hypostatic pneumonia or infectious pneumonia, either lobar or bronchial.

This patient was known to have been sensitive to horse serum. A severe serum sickness had followed the administration of antistreptococcus serum for erysipelas at the age of 10 months. There was no other history of allergy.

SUMMARY

A 17 year old girl, suffering from the effects of a lethal dose of phenobarbital, collapsed following the institution of a slow intravenous drip of amigen. Death seemed inevitable. Nikethamide in large doses apparently was effective in stimulating the failing respiratory rate and can probably be credited with averting a fatal termination.

CONCLUSION

Amigen may give rise to serious foreign protein reactions.

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[1] A pancreatic hydrolysate of casein containing amino acids and polypeptides.

INOCULATION TUBERCULOSIS

H. E. BASS, M.D.
New York

Inoculation tuberculosis, although infrequent, does occur.[1] A review of the literature indicates that a differentiation must be made between the true primary complex and reinfection tuberculosis. The occurrence of a tuberculous chancre and regional swelling of the lymph node is of great differential aid, especially when accompanied with a change from a negative to a positive tuberculin reaction.

The characteristics of the tuberculous chancre have been well described.[2] Stokes[3] reviewed the subject of primary inoculation tuberculosis of the skin. The following report of a case is considered to be of unusual interest because of the circumstances incident to the occurrence of a typical cutaneous chancre with regional tuberculous lymphadenitis.

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[1] Cameron, C.: The Point of Entry in Tuberculous Infection, Lancet **2**: 1275, 1943. Michelson, H. E.: The Primary Complex of Tuberculosis of the Skin, Arch. Dermat. & Syph. **32**: 589 (Oct.) 1935.

[2] Goldberg, B.: Clinical Tuberculosis, ed. 3, Philadelphia, F. A. Davis Company, 1942.

[3] Stokes, J. H.: Primary Inoculation Tuberculosis of the Skin with Metastasis to Regional Lymph Nodes, Am. J. M. Sc. **169**: 722, 1925.

REPORT OF CASE

The patient was a former army officer, white, aged 25, without any previous significant medical history. He had not knowingly been exposed to tuberculosis. On Jan. 15, 1945 he received multiple superficial wounds of the face, in part from shell fragments and in part from splinters of wood from the barn in Belgium in which he had taken shelter. He was hospitalized, and fragments of metal and wood were excised from his face. On February 12 he returned to duty, all areas apparently fully healed.

On February 16 he first observed a tender swelling "like a boil" just lateral to the external canthus of the right eye, at a point where a fragment of wood had been excised. At the same time he noted a tender swelling below the right mandible. He received treatment by hot packs, but the swelling over the face and in the neck increased.

He was hospitalized on Feb. 24, 1945. On admission he was febrile and nauseated. He received intravenous fluids and penicillin, with prompt disappearance of fever and nausea. Two diagnostic needle aspirations of the swelling near the right eye were performed, but records of the results are not available. Under treatment with hot compresses, the facial lesion broke down and formed an ulcer, which measured ½ inch (1.27 cm.) in diameter. The edges were elevated, and the base did not bleed when rubbed. The node in the right anterior cervical triangle was the size of a small egg, and two marble-sized nodes also were found just above the right clavicle. It was noted that the appearance of the ulcer suggested a malignant lesion.

On April 10, 1945 the ulcer and the large cervical lymph gland were excised under general anesthesia. Microscopic examination revealed caseofibroepithelioid and epithelioid giant cell tuberculosis, involving 90 per cent of the lymph node. Ziehl-Neelsen carbolfuchsin stain revealed acid-fast bacilli. Examination of the skin revealed epithelioid giant cell and caseo-epithelioid tuberculosis. Acid-fast bacilli were found in the section.

A tuberculin test revealed a 2 plus reaction to first strength purified protein derivative of tuberculin. Examination of the blood showed: red blood cells 4,700,000, hemoglobin 90 per cent, white blood cells 7,500, polymorphonuclears 66 per cent, lymphocytes 32 per cent, and eosinophils 2 per cent. The sedimentation rate was 17 mm. (Westergren). He received three treatments with roentgen ray to the lesions on his face and neck, each treatment consisting of 75 r. He also received a short course of ultraviolet therapy.

At a follow-up examination on Aug. 31, 1945 there were two pinhead-sized, slightly depressed brownish lesions which, in the opinion of the skin consultant, represented active tuberculosis. These lesions were present on the surface of the scar over the right zygomatic area. On the right side of the neck there was a moderately indurated scar, 1 inch (2.54 cm.) in length. Two pea-sized nodes were palpable just above the right clavicle. On Sept. 3, 1946 the scar over the right zygomatic area was completely healed. The scar in the neck had not changed since the previous examination. The glands on the right side of the neck were small and had not changed appreciably in size.

COMMENT

This case presents the unusual aspect of clinically primary tuberculosis of the skin following a war injury. It is noteworthy that clinical symptoms appeared approximately one month following the injury. It would have been of great interest to determine whether the Mycobacterium tuberculosis bacilli which were found in both ulcer and gland were of the bovine or human type, but unfortunately this was not done.

266 West End Avenue.

Council on Industrial Health

THE RECOGNITION AND TREATMENT OF CARBON TETRACHLORIDE POISONING

This information circular was prepared by the Safety Research Institute and referred to the Council on Industrial Health and others for review and acceptance preparatory to publication.

CARL M. PETERSON, M.D., *Secretary.*

The industrial importance of organic solvents is constantly increasing. This increase is accompanied with a growing recognition that all organic solvents are toxic and with the widespread installation of protective controls. Cases of solvent intoxication continue to occur, however, as the result of accidents, lack of information, carelessness on the part of workmen and inadequate precautions on the part of small "incidental" users.

Carbon tetrachloride, because of its complete nonflammability and its desirable physical and chemical properties, is one of the most widely used organic solvents. It is employed as a dry cleaning fluid, as a metal degreaser, as a rubber solvent, as a fire extinguishing agent, as a constituent of household cleaning fluids and for a variety of other industrial and nonindustrial applications. Like many other useful products, however, it is not always handled properly, particularly by new users who may not have familiarized themselves with the nature and prevention of its toxic effects.

Physicians and nurses may find helpful this survey of the literature on the diagnosis and treatment of carbon tetrachloride intoxication, which has been prepared with the assistance of physicians, industrial hygienists and the manufacturers of the solvent.

THE SIGNS AND SYMPTOMS OF CARBON TETRACHLORIDE POISONING

Toxic reactions to carbon tetrachloride may result from a single brief exposure to a high concentration of the vapor, from prolonged or repeated exposure to a moderately high concentration or from regular daily exposure to low concentrations in excess of known or accepted safe limits; from repeated contact of the skin with the liquid, or from ingestion of the liquid. In addition, some persons show allergic-type skin reactions resulting from a single contact with the liquid or symptoms of intoxication from contact with the vapor even though it is below the normally dangerous limit.

Obese persons, alcoholic addicts and undernourished individuals are likely to be especially susceptible to carbon tetrachloride injury, as are those with diabetes, liver or kidney disease, jaundice, pulmonary or heart disease or peptic ulcers. The assignment of such persons to work where they may be exposed to the solvent can be avoided by preplacement physical examination.

The signs and symptoms of poisoning from carbon tetrachloride differ somewhat according to the nature of the exposure:

1. A single exposure to a high vapor concentration may cause a feeling of fulness in the head and mental confusion, followed by headache, dizziness, nausea, stupor or loss of consciousness. Death due to respiratory failure may follow if the person is not promptly removed to a safe area. A heavy exposure may result in the delayed appearance of systemic poisoning with liver and kidney symptoms.

2. Repeated or prolonged inhalation of air containing unsafe concentrations of vapor may cause headaches, fatigue, nausea, vomiting, dizziness, visual disturbances and coughing of bloody mucus, followed in severe cases by acute nephritis, jaundice or toxic hepatitis. Injury to the central nervous system may occur.

3. Repeated contact with the skin removes the sebum and thus may result in redness, roughness, chapping and subsequent infections. The statement occurs occasionally in the literature that symptoms of systemic intoxication may result from prolonged skin contact, particularly in cases of burned areas or open cuts or wounds. It may be that symptoms attributed to absorption through the skin are due to inhalation of vapor at the time of skin contact.

4. Cases of poisoning by ingestion have been reported following the use of carbon tetrachloride as an anthelmintic. Effects are nausea, vomiting, abdominal distress, diarrhea, bloody stools, unconsciousness or coma. Later effects may be jaundice, cirrhosis of the liver and damage to the kidneys, heart, adrenal glands or nervous system. Intake of more than 3 to 4 cc. orally may cause death.

Intoxication with any one of a large number of industrial chemicals results in symptoms and syndromes similar to those listed. Most organic solvents, including benzene, methyl alcohol and carbon disulfide, and many metallic poisons as well, cause headache, vertigo, nausea and diarrhea. Symptoms of liver damage have been reported among the effects of intoxication with a wide variety of substances, including arsine, chlorinated naphthalenes, the chlorinated ethanes and occasionally benzene.

In many instances of acute poisoning by carbon tetrachloride the patient or his associates will know what toxic agent is concerned, but when products carrying brand names or solvent mixtures may be involved or in chronic exposure cases, a referral to carbon tetrachloride usually cannot be made on the basis of symptoms alone. The safety department at the plant where the patient is employed, or sometimes the industrial hygiene division of the local or state health department or labor department, may be helpful in identifying the nature of the patient's exposure.

Such authoritative assistance may also be useful in case the physician is later called on to give legal evidence in connection with the case.

THE TREATMENT OF CARBON TETRACHLORIDE POISONING

Contact with the Eyes.—The first step, if carbon tetrachloride spills or splashes into the eyes, is to wash them with large amounts of water for at least fifteen minutes. It is advisable to use a low pressure supply of water at room temperature in order to minimize the pain and discomfort caused by this procedure. Thereafter, symptomatic therapy should be employed if indicated.

Contact with the Skin.—Wash the skin thoroughly with a mild soap and warm water. After this an ointment containing petrolatum or lanolin should be applied in order to replace partially the natural skin oils. For cases of frank dermatitis or for signs and symptoms of generalized poisoning, symptomatic treatment is recommended.

Inhalation of the Vapor.—A person showing symptoms such as headache, nausea, dizziness or unconsciousness should be immediately removed to an area where the air is fresh and uncontaminated by carbon tetrachloride vapors. He should rest quietly and be kept warm. In case breathing has stopped, artificial respiration such as that obtained by the prone pressure or by the Eve rocking method should be used. If oxygen inhalation apparatus is available, oxygen should be administered. If the patient is conscious, hot tea or coffee may be given as a stimulant. An alcoholic stimulant or epinephrine should never be given to a person overcome by carbon tetrachloride.

Persons with only mild symptoms of solvent intoxication usually recover uneventfully under symptomatic treatment if they are protected from further inhalation of excessive amounts of solvent vapors. In more severe cases in which there are indications of liver or kidney involvement, carefully considered therapy is required. Hospitalization may be advisable for persons suffering from acute exposure.

Ingestion of the Liquid.—The first step is the prompt elimination of unabsorbed portions of the solvent, if it is suspected or known that a person has swallowed carbon tetrachloride. The patient should be made to vomit by drinking a glass of mustard water, lukewarm salty water or warm soapy water. If necessary the patient should be encouraged to stick his finger down his throat to induce vomiting. This procedure should be repeated at least three times. Following this, 1 tablespoon of epsom salt in water should be administered. (CAUTION: NEVER GIVE ALCOHOL, FATS, OILS OR EPINEPHRINE TO A PERSON WHO HAS BEEN EXPOSED TO CARBON TETRACHLORIDE.)

Symptoms of systemic illness should be watched for. They may develop quickly or they may be delayed several days.

SYSTEMIC THERAPY

The survey which follows is intended merely as a guide to the literature which has been published on this subject.

Davis and Hanelin,[1] who studied the problem of therapy after successfully treating a patient severely poisoned by inhalation, with renal involvement, made the following recommendations:

"Immediate removal or withdrawal of the poison is essential to successful treatment. If one bears in mind the complex clinicopathologic picture and disruption of the normal body chemistry, the treatment resolves itself into the following procedures:

"1. Intravenous hypertonic glucose and Hartman's solution to combat acidosis and liver dysfunction.

"2. Insulin in small doses, usually 2 to 3 units of U 20, to facilitate carbohydrate, fat and protein metabolism.

"3. Calcium gluconate[2] or calcium lactate, as recommended by Minot[3] and Cutler.[4]

"4. Papaverine hydrochloride or sulfate, an alkaloid of opium, ½ grain [32 mg.] intravenously where coronary, kidney and spastic states are present.

"5. Sodium decholin as a diuretic to facilitate the action of papaverine." [Some authorities state, however, that sodium decholin is given as a cholagogue; it may have slight diuretic effect, but diuretics do not facilitate the action of papaverine.]

"6. The xanthine diuretics to relieve the coronary embarrassment and to facilitate diuresis; however, we think the papaverine effect is slightly better.

"7. Never use epinephrine, since the Jourdans[5] have observed syncope subsequent to its use in carbon tetrachloride poisoning.

"8. Methylene blue may be used as recommended by Nelson,[6] but we have had no experience with this method." [Recent reports indicate that the use of methylene blue may be followed by untoward developments.]

"9. Oxygen inhalation may be necessary if pneumonic symptoms are present.

"10. The administration of a high carbohydrate diet is essential.

"11. Blood transfusion may be necessary for anemia."

According to Allison[7] "two drugs, calcium and glucose, are definitely indicated in the treatment of carbon tetrachloride poisoning."

Insulin and diuretics may not be necessary in every case. The danger of administering epinephrine in cases of carbon tetrachloride poisoning should be emphasized.

The amino acid methionine (dose 2 Gm. or more daily) has recently been used with success in therapy of several cases of carbon tetrachloride poisoning. Based on animal experimentation, treatment with choline chloride (2 to 5 Gm. daily) and cystine, together with a high protein, high carbohydrate, low fat diet, is suggested by one authority. A case of acute systemic poisoning resulting from accidental ingestion of a sizable amount of the solvent, reported by Beattie, Herbert, Wechtel and Steele,[8] was successfully treated with a combination of casein digest and methionine. Subsequently a series of 6 patients, 2 of them acutely ill, who had suffered industrial exposures to extremely high concentrations of carbon tetrachloride vapor, were successfully treated by Eddy[9] with intravenous glucose, a high protein, high carbohydrate and low fat diet, together with methionine, in doses of 2 Gm. every four hours. The most seriously ill of these patients received 68 Gm. of methionine during the course of treatment.

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[1] Davis, George G., and Hanelin, Henry A.: Carbon Tetrachloride Poisoning, Indust. Med. **6:** 24 (Jan.) 1937.

[2] Ten cc. of a 10 per cent solution of calcium gluconate intravenously two or three times daily, with 12 Gm. of calcium gluconate or 8 Gm. of calcium lactate by mouth, is recommended by R. T. Johnstone (Occupational Diseases, Philadelphia, W. B. Saunders Company, 1942).

[3] Minot, A. S.: The Effect of Calcium on the Toxicity of Carbon Tetrachloride, Am. J. Physiol. **81:** 502, 1928.

[4] Cutler, J. T.: Influence of Diet on Carbon Tetrachloride Intoxication in Dogs, J. Pharmacol. & Exper. Therap. **45:** 209-226 (June) 1932.

[5] Jourdan, F., and Jourdan, F.: Syncopes adrénaline-mono-di et tetrachloromethaniques (syncopes caused by epinephrine associated with carbon tetrachloride), Compt. rend. Soc. de biol. **107:** 1541-1542 (Sept. 18) 1931.

[6] Nelson, Robert Lyman: Methylene Blue in the Treatment of Carbon Tetrachloride Poisoning, Minnesota Med. **17:** 344 (June) 1934.

[7] Allison, B. R.: The Treatment of Acute Carbon Tetrachloride Poisoning, with a Report of 2 Cases, Ann. Int. Med. **16:** 81-93, 1942.

[8] Beattie, J.; Herbert, P. H.; Wechtel, C., and Steele, C. W.: Studies on Hepatic Dysfunction: 1. Carbon Tetrachloride Poisoning Treated with Casein Digest and Methionine, Brit. M. J. **1:** 209 (Feb. 12) 1944.

[9] Eddy, James H.: Carbon Tetrachloride Poisoning: A Preliminary Report on One Use of Methionine in Hepatitis, J. A. M. A. **128:** 994-996 (Aug. 4) 1945.

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SATURDAY, NOVEMBER 30, 1946

HEALTH AND WELFARE IN EMPLOYMENT CONTRACTS

The growing interdependence between industrial medicine, community medical services and public health administration was never more clearly demonstrated than in the negotiations resulting in the National Bituminous Coal Mines Wage Agreement. The terms of this contract between the mine workers and the government acting as operator of the soft coal mines are well known. They range from long overdue revision of safety codes and workmen's compensation benefits to direct participation by the union in the administration of funds for medical and hospital care and for general welfare. The medical profession seems to be sympathetic to all bona fide efforts to improve working and living conditions. The Council on Industrial Health, the Board of Trustees and the House of Delegates of the American Medical Association have approved the general policy of cooperative industrial health planning by management, labor and medicine, provided scientific and ethical standards are maintained.

The results of the comprehensive survey and study of the hospital and medical facilities, medical treatment, sanitary and housing conditions in the bituminous coal areas described by Boone elsewhere in this issue are indicative of the needs. The purpose is to raise the level of these facilities to recognized American standards The survey teams supplied by the Bureau of Medicine and Surgery of the U. S. Navy will present an objective report. Past investigations of the coal mine areas, and no doubt the present one, call attention to the shortcomings of contract practice, the advantages and disadvantages of industrywide medical and hospital care plans, the need for greatly expanded medical supervision over the physical status of workers and their working environment, the shortages in medical personnel and hospital facilities and the serious deterioration of standards of public health administration in the coal regions.

In spite of impending legislation, health and welfare are likely to be important factors in future collective bargaining. Labor may ask for greater direct participation not only in industrial medical service but in plans for general medical care. Both the Council on Industrial Health and the Council on Medical Service have been actively concerned with the medical implications in the coal mine wage agreement and the probable extension of similar contracts to other occupational groups. Herein lie many opportunities for constructive medical leadership. The medical profession obviously has great but not complete responsibility for standards of medical care and public health services. Enlightened elements in the community must assume their share of this burden, particularly in adequate local support. As far as the coal mine region is concerned, an early conference representing employers, employees and the medical profession is urgently indicated.

IMMUNOLOGIC ROLE OF MINERALS AND AMINO ACIDS

The association of famine with infectious diseases[1] and the many examples of increased susceptibility to intercurrent infection evidenced by hypoproteinemic patients[2] indicate a relationship between dietary factors and bacterial resistance. In his 1942 presidential address before the American Association of Immunologists Cannon[3] of the Department of Pathology, University of Chicago School of Medicine, suggested a theory that would account for this relationship. He pictured antibodies as specifically modified humoral globulins whose formation is dependent on protein intake and protein reserves.

Cannon and his associates[4] showed that decreased protein reserves brought about by prolonged low protein diets leads to a definite decrease in specific antibody production in laboratory animals. The antibody producing mechanism is not permanently damaged by such depletion, as shown by the fact that the antibody function may be restored to its original level by ingestion of adequate amounts of high quality proteins,[5] protein hydrolysates[6] or amino acids.[5] Increased antibody production is noted as early as two days after beginning this repletion and is restored to nearly normal by the end of seven days.

In a typical experiment, several groups of rats were placed on a low protein diet for one hundred and seventy-three days. During this time they lost some 35 per cent of their original body weight. There was a parallel fall in the percentages of hemoglobin and serum protein. Certain of these depleted animals were then changed to the same low protein diet, in which a mixture of sixteen crystalline amino acids modeled after the amino acid composition of casein was substituted for the same weight of corn starch.

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[1] Cannon, P. R.: Scient. Monthly **56**: 5 (Jan.) 1943.

[2] Cannon, P. R.: J. Am. Dietet. A. **20**: 133 (March) 1944.

[3] Cannon, P. R.: J. Immunol. **44**: 107 (June) 1942.

[4] Cannon, P. R.; Chase, W. E., and Wissler, R. W.: J. Immunol. **47**: 133 (Aug.) 1943.

[5] Wissler, R. W.; Woolridge, R. L., and Steffee, C. H.: Proc. Soc. Exper. Biol. & Med. **62**: 199 (June) 1946.

[6] Wissler, R. W.; Woolridge, R. L.; Steffee, C. H., and Cannon, P. R.: J. Immunol. **52**: 267 (March) 1946.

On the seventh day of this amino acid feeding each animal, together with an equal number of depleted controls, was injected intravenously with 1 cc. of 0.25 per cent washed sheep erythrocytes. Blood for antibody titration was taken at periodic intervals during the next ten days. The average maximum hemolytic titer of the depleted controls was 100 units. With animals given the amino acid feeding the average titer was between 500 and 600 units. The substitution of crystalline amino acids for carbohydrates thus increased antibody production at least fivefold. As much as a tenfold increase in antibody production was demonstrated in certain repletion experiments with high grade proteins (dehydrated beef) and a twentyfold increase with protein hydrolysate (amigen).

Cannon pictures his data as confirmation of his theory that antibody production is dependent on an adequate supply of essential amino acids coming either from food or from protein reserves. He believes that these repletion tests have a practical bearing on prophylaxis under famine conditions and on the preparation of debilitated patients for vaccination or surgical operations. These observations are applicable to man, as shown by Krebs[7] of the Department of Medicine, Washington University School of Medicine, who tested a patient with uncomplicated nutritional hypoproteinemia. The patient's gamma globulin was but 0.15 Gm. per hundred cubic centimeters, or about one-fourth normal. The patient was vaccinated against typhoid by three weekly injections of 1 billion killed typhoid bacilli. After completion of this immunization, the patient's serum did not contain a trace of antityphoid agglutinins. Detailed studies of the role of individual amino acids in specific antibody production are now in progress. Preliminary tests suggest that only eight of the sixteen amino acids in casein are essential for antibody production.[8]

A second, equally promising, new lead in nutritional immunity is reported by Elvehjem and Clark[9] of the Departments of Biochemistry and Bacteriology, University of Wisconsin Medical School, as a result of their study of the role of minerals in antiviral immunity. Eleven hundred Swiss mice from 21 to 24 days old were divided into groups of 20 to 35 mice each by the split litter technic, with consideration for sex and weight. The control mice were given a complete synthetic diet plus 4 per cent optimum salt mixture. Other groups were fed on the same ration, in which one or more of the essential minerals was reduced to a minimum. After eight to fifteen days on this depletion diet each animal was injected intracerebrally with a standard dose of Theiler's neurotropic virus.

In a typical experiment five groups of mice were placed on diets containing 0, 5, 15, 30 and 100 per cent of the optimum amount of potassium. Twenty-six per cent of those on the control (optimum) potassium diet became paralyzed within five days after inoculation, increasing to 91 per cent by the end of ten days. Among those without potassium, none became paralyzed before the sixth day, increasing to but 32 per cent by the end of ten days. In another group deprived of both sodium and potassium for twelve days only 18 per cent became paralyzed after inoculation with this neurotropic virus. Animals given intermediary doses of potassium showed intermediary percentages of paralysis.

Similar increases in natural resistance were shown in mice after ten to fifteen days of restricted intakes of phosphorus. A slightly less increased resistance was shown after restricted intake of sodium. Restricted intakes of calcium, magnesium or chlorine for the same length of time did not cause any change in antiviral resistance.

THE COMMISSION ON HOSPITAL CARE

The Commission on Hospital Care has just made available a condensation of the report of a two year study of "Hospital Care in the United States." The 700 page report offers 185 conclusions and recommendations for bringing better hospital care to the American people. Thomas S. Gates, LL.D., Philadelphia, chairman of the Commission on Hospital Care and chairman of the University of Pennsylvania, said "If this program fulfils the objectives it will become the blueprint for a voluntary organization and development of hospital services and facilities that will offer all people everywhere within our country an excellence of hospital care never heretofore attained." The Commission on Hospital Care was established as an autonomous study group at the suggestion of the American Hospital Association. The two year study was financed by contributions of $35,000 each from the W. K. Kellogg Foundation, the Commonwealth Fund and the National Foundation for Infantile Paralysis. The U. S. Public Health Service cooperated by assigning personnel to assist. The committee collaborated with local state groups in detailed studies of their needs and conducted a "pilot study" of Michigan assisted by the Michigan Hospital Association and state agencies. From experience in Michigan the commission developed its present report.

Soon after organization of the commission, Senators Hill and Burton introduced the legislation which culmi-

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[7] Krebs, E. G.: J. Lab. & Clin. Med. 31: 85 (Jan.) 1946.

[8] Cannon, P. R.: University of Chicago Round Table, Sept. 8, 1946.

[9] Lichstein, H. C.; McCall, K. B.; Kearney, E. B.; Elvehjem, C. A., and Clark, P. F.: Proc. Soc. Exper. Biol. & Med. 62: 279 (June) 1946.

ARMY AWARDS AND COMMENDATIONS

Lieutenant Colonel Harold B. Hermann

The Bronze Star Medal was recently awarded to Lieut. Col. Harold B. Hermann, M. C., U. S. Army, Brooklyn, for meritorious achievement at Okinawa, Ryukyu Islands, from May 20 to Sept. 2, 1945 in connection with military operations against the enemy. In recounting his services the citation stated that, "as commanding officer of a station hospital, Lieutenant Colonel Hermann established a 400 bed hospital unit with maximum efficiency despite enemy air attacks and heavy rains which delayed the unloading of medical supplies and equipment. When the hospital was designated as the army evacuation center for Okinawa he performed this additional mission in such an outstanding manner that over 5,000 patients were processed and dispatched to rear areas without fatalities or serious mishaps. He demonstrated exceptional leadership and resourcefulness in maintaining high morale among both patients and staff and in making emergency improvisations to alleviate the overflow conditions which often existed. By his outstanding professional knowledge, administrative ability and devotion to duty, Lieutenant Colonel Hermann contributed substantially to the safe and efficient evacuation of sick and wounded army personnel from Okinawa and to the hospitalization program for that area." Dr. Hermann graduated from New York University College of Medicine, New York, and entered the service April 5, 1941.

MISCELLANEOUS

CAMPAIGN FOR FUND FOR NURSES MEMORIAL

The campaign to raise at least $2,500,000 for the Nurses National Memorial began throughout the country November 17. The memorial will be a tribute to the nurses who served in World War II and particularly to the 196 women of the Army Nurse Corps who lost their lives in the war. The campaign will continue until after New Years, and contributions will be sought from all citizens.

The memorial, to be erected in Washington, will be a home and center for upward of 100,000 women who will be eligible to use its facilities. The memorial will provide sleeping accommodations for at least 300 women, a lounge, library, assembly rooms, and dining and kitchen facilities.

Arthur H. Johnson, the national chairman, announced from the headquarters at 825 Woodward Building, Washington, D. C., that contributions will be sought from all citizens. In communities where chairmen have been established, these donations can be given to the local committee; otherwise they can be sent to National Headquarters in Washington. Thousands of hospitals, stores and other establishments will accept contributions by coin collectors or other means.

The memorial has been widely endorsed by leaders in all walks of life. One of the more recent additions to the list of sponsors is Cardinal Joseph Francis Spellman. At the recent meeting of Army chaplains in Washington, assembled for the sixteenth annual convention, the Chaplains Association of the Army and Navy unanimously endorsed the Nurses National Memorial campaign and urged all chaplains to lend their support to the project.

MEDICAL OFFICERS NEEDED FOR INDIAN SERVICE

The Department of the Interior announced on November 8 that medical officers were urgently needed for duty in the U. S. Indian Service. Preference will be given to former military personnel and federal employees. The entrance salary for recent graduates is $4,149.60 and for those who have had additional experience or special training $4,902 per annum.

Applicants must be graduates of an approved medical school and have successfully completed at least one year of internship in an approved hospital or its equivalent. Applicants must be American citizens and in good physical condition, but physical requirements are not as high as for the Army or Navy. When vacancies occur in the higher grade positions, promotions are made within the service whenever practicable. Government-furnished quarters are usually available at a cost of about $25 to $40 per month, and food costs are about the same as in any comparable rural area.

The Indian Service furnishes a unique complete medical service to Indian beneficiaries of all ages, mostly in rural areas within the United States and to the native population of Alaska. Appointments may be made to a hospital position or to a general practice on reservations. Most of the vacancies lie in the states west of the Mississippi River. Applicants may express a preference as to location. Appointments in Alaska have a 25 per cent differential in addition to base pay, and transportation of the appointee and his family and personal effects from place of actual residence to assignment in Alaska is paid by the government.

Interested physicians are urged to write to the Office of Indian Affairs, Merchandise Mart, Chicago 54, for further details and application forms.

PUBLIC HEALTH SERVICE

MEDICAL OFFICERS RELEASED FROM SERVICE

U. S. Public Health Service headquarters reports that the following medical officers have been terminated, inactivated, or retired, and directed to proceed to the city opposite their name:

Berman, Irving L., Senior Assistant Surgeon (R), Newton Center, Mass.

Callahan, Neil, Senior Assistant Surgeon (R), New Orleans.

Caplan, Sheldon M., Senior Assistant Surgeon (R), Chester, Pa.

N. Y.

Dillon, Milton, (R), Bronx,

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Lubitz, Joseph M., Surgeon (R), Milwaukee.

Marciano, Charles A., Surgeon (R), Brooklyn.

Miller, Arthur C., Senior Assistant Surgeon (R), Santa Rosa, Calif.

Olansky, Sidney, Senior Assistant Surgeon (R), Durham, N. C. (inactivation).

Rush, Willett H., Senior Assistant Surgeon (R), Versailles, Ky.

Rutecki, Vincent, Senior Assistant Surgeon (R), Buffalo.

Shack, Munroe E., Senior Assistant Surgeon (R), Somerset, N. J.

Taylor, Carl E., Assistant Surgeon (R), Cincinnati.

Treat, Michael R., Senior Assistant Surgeon (R), Philadelphia.

Camp, Wesley, Surgeon (R), Pueblo, Colo.

Clarence H., Medical Director, Pass Christian, Miss

Surgeon (R), New Orleans.

Assistant Surgeon (R), New York.

Senior Assistant Surgeon (R), Louisville.

Assistant Surgeon (R), Mauricetown,

nated in the Hospital Survey and Construction Act. Every state in the nation now has inaugurated or is organizing its own survey. The Hospital Survey and Construction Act authorizes $3,000,000 in federal assistance funds for surveys and $75,000,000 annually for each of five years for assistance in the actual construction of hospitals and public health centers, this amount to be augmented two to one by state or private funds. Thus the total amount of construction envisioned in the acts amounts to $1,125,000,000.

The conclusions and recommendations of the commission propose that governmental general hospitals in areas not adequately served by nongovernmental hospitals should function as community institutions but should not expand where nongovernmental facilities are meeting the need. Voluntary, nonprofit hospitals should be used to provide care to beneficiaries of the government whenever possible. The commission urges much closer coordination of special institutions (such as those for the care of the tuberculous, other chronically ill and nervous and mental patients) with general hospitals. The managing boards of hospitals, including governmental, church and private hospitals, the commission feels, should include representatives of the public. General hospitals, the commission holds, should make proper arrangements for the care and treatment of communicable diseases and for acute infantile paralysis. Either the special communicable disease hospitals now operated by cities, counties and states should be discontinued or their service should be expanded to provide care for other types of illness.

The commission proposes that hospitals make their diagnostic facilities generally available to all competent doctors in the community and that diagnostic clinics be established in the interests of both doctors and patients. When possible and desired, hospitals should provide office space for doctors and, when conditions permit, combine their efforts with those of the medical profession toward the extension of group medical practice. Rehabilitation of patients after illness, health education of both patients and the public, and coordination with public health departments are matters to which hospitals should give detailed consideration.

The report outlines a number of proposals for the registration of hospitals and for appraising the quality of the care they provide. All institutions providing overnight bed care for the sick should be licensed and should be subject to inspection by a state authority having the counsel of hospital administrators and professional personnel. To attract physicians and nurses to rural areas, the report favors special inducements, including regular visits to rural institutions by members of the faculties of medical colleges for clinics and educational meetings. Separate Negro hospitals should not be developed except in communities where such hospitals are required by law. In the latter instances as good hospital service for Negro patients as for white patients should be maintained. The report proposes the admission of qualified Negro physicians to hospital staffs, an increase in the number and employment opportunities of Negro nurses and full educational opportunities for Negro physicians and nurses. For better service to the people, the report urges interchange of hospital services and equipment among institutions to reduce costs and also the establishment of coordinating councils to assist close working relationships.

The report outlines principles which the commission believes should form the basis of any system of payment which may be adopted to insure wide distributions of hospital care and to make possible the maintenance of high standards of service. Federal aid may lift the level of hospital care in the low income states to a standard which would insure the good health of the nation. Concerted efforts need to be made by both governmental and private agencies to extend membership to nonprofit prepayment plans, according to the commission, until some other more satisfactory and comprehensive means are developed to meet all the needs of all the people. It recommends that any legislation which prescribes that hospital care insurance shall be obligatory should permit its purchase from any agency, public or private, which conforms to established standards of service and operation.

Citing the need for replacement of a large number of existing hospitals, the commission explains that perhaps 25 per cent of all hospital beds are in this category. The pilot study in Michigan yielded data which, projected for the nation as a whole, "indicate that the public need would be better served by approximately 40 per cent fewer but larger hospitals." At present costs the construction and equipping of the proposed new hospital facilities would approximate $1,800,000,000, the commission estimates. Operation of these additional facilities would add about $375,000,000 a year to the nation's hospital bill for the care of acute general illness. The nation's bill for care in general hospitals now amounts to some $1,006,000,000 annually. Another half billion dollars is expended yearly for the care of nervous and mental diseases, tuberculosis and other special illnesses.

While the report is concerned basically with general hospitals, it estimates that there is a need for 45,000 additional beds for tuberculous patients and it recommends that they be established in or near general hospitals where these can be converted to other use as the prevalence of tuberculosis declines. It cites an apparent need for additional nervous and mental facilities but states that detailed study and reorganization of methods of treatment and administration should come first.

Current Comment

DOCTORS THEN AND NOW

The centennial year of the American Medical Association will be recognized in a series of broadcasts over the stations and networks of the National Broadcasting Company; the title is "Doctors Then and Now." The theme and subtitle of the series will be "One Hundred Years of Progress in American Medicine." This broadcast, announced in detail on page 648 of The Journal, November 16, will be developed regionally. The progress of medicine in various areas of the United States will be recounted with the cooperation of the state medical societies. The event chosen by the medical profession in each region as its most significant or most interesting contribution to the progress of American medicine will be dramatized. The dramatization will come from Chicago, using the facilities of the National Broadcasting Company. Having pictured "Doctors Then" the broadcast will switch by means of specially leased wires to a radio station in the area which is the topic of that week's presentation. There a physician will be waiting to make a rapid summary of "Doctors Now" in that area. Each of these speakers will be a nominee of the medical profession in the area. A special mailing piece is being prepared to point up progress in American medicine in the hundred years since the American Medical Association was organized. These mailing pieces will be sent from the Chicago headquarters in response to inquirers who write for further information. The mailing pieces will also be available in quantities at a nominal charge for medical societies who choose to take over the distribution in their own area. Dates for the various regional broadcasts will be made known to medical societies in the respective areas in plenty of time for them to give wide publicity to these events. Publicity by state medical societies and local societies is envisioned not only through publications which reach the doctor but through press releases, local broadcasts, announcements by speakers and in any other way which seems most feasible locally.

THE NATIONAL CONFERENCE COMMITTEE ON WORKMEN'S COMPENSATION

The Council on Industrial Health was established in the structure of the American Medical Association to bring about better clinical and administrative care of persons injured by industrial accidents or incapacitated by occupational disease. The efforts to accomplish this purpose have recently been formalized through the organization of a National Conference Committee on Workmen's Compensation. First steps were taken in 1944, when representatives of the International Association of Industrial Accident Boards and Commissions, of the insurance companies' Combined Claims Committee and of the Council on Industrial Health of the American Medical Association outlined the need for a joint approach to the problem and elaborated a twelve point program. The simplification and uniformity of forms for reports, the adoption of a standard nomenclature and statistical methods, medical testimony, disability evaluation, rehabilitation, elevation of standards of medical care for the industrially disabled and greater participation in administration by medically trained people with essential administrative qualifications are problems of special interest to the physician. Most of these activities have been assigned to subcommittees which are empowered to seek technical advice and assistance from other interested groups and agencies. Other committees are concerned with administrative functions, for example, more prompt payment of compensation benefits and reductions in hearings and appeals. Since the early steps of organization, invitations to participate have been extended to the two national labor groups, the National Association of Manufacturers, the Chamber of Commerce of the United States, the Bureau of Labor Standards of the United States Department of Labor and more recently to the National Association of Self Insurers. The results of committee investigation and specific recommendations are to be submitted to each participating organization for additional study and debate and, if necessary, ratification. Already some excellent foundation work has been accomplished. Medicine has much to contribute in the broad field of compensation administration and, even more, in the intimate details of case management. One of the principal planks in the program of the Joint Conference Committee states that the work of the committee must be fundamentally in the best interests of the individual worker.

THE CARE OF CHILDREN IN DAY NURSERIES

The great influx of married women into industry during the war years led to a rapid increase in day nurseries, many of which were poorly equipped and inadequately staffed. In some of these institutions conditions existed which were reminiscent of the novels of Charles Dickens—they were being operated largely for the profit of the proprietor and with little if any attention to the needs of the children. Even in the best of these nurseries, problems of communicable disease control and of nervous fatigue brought about by an excessively stimulating environment were serious and the need for a planned and cooperative attack on these problems became evident quite early in the development. Two pamphlets recently published by the Child Welfare League of America, Inc., offer many useful suggestions and guide lines for physicians, educators, nurses, social workers, sanitarians, nutritionists, psychologists and all other workers associated in any way with day nurseries. The first of these, "Daytime Care—A Partnership of Three Professions," reports the findings of a triprofession conference on day care held June 11-15, 1945 at Old Lyme, Conn. The second, "The Day Care of Little Children in a Big City," explains the work of the Day Care Unit which has been operating in the New York City Department of Health (Bureau of Child Hygiene) since 1943. These pamphlets, which should be read by all physicians connected with day nurseries, are procurable from the Child Welfare League of America, Inc., 130 East Twenty-Second Street, New York 10.

ORGANIZATION SECTION

Official Notes

RESOLUTION TO BE PRESENTED TO HOUSE OF DELEGATES

The following resolution has been submitted by Dr. A. S. Giordano, a member of the House of Delegates representing the Indiana State Medical Association:

Resolution on Intern and Resident Medical Training

Whereas, The primary objective of intern and resident medical training is medical education; and

Whereas, The acceptability of internships and residencies in hospitals should be founded on the excellence of their teaching programs; and

Whereas, The number of hospitals approved for intern and resident training exceeds the number of available interns and residents; and

Whereas, Such disparity has forced hospitals to compete for applicants for training on monetary rather than on educational opportunities; therefore be it

Resolved, That a reasonable and uniform maximum figure for the remuneration of interns and residents be established, so that the monetary value of internships and residencies may not act as a deciding factor in the applicants for such training.

Washington Letter

(From a Special Correspondent)

Nov. 25, 1946.

Newspaper Calls Delay in Modernizing Prosthetic Devices "Artificial Limb Disgrace"

In an editorial entitled "Artificial Limb Disgrace" the Washington *Daily News* and some twenty-one other Scripps-Howard newspapers have criticized the manufacturers of artificial limbs for alleged failure to incorporate reported modern improvements in the new prosthetic devices now being manufactured. "These improvements, according to Gen. G. B. Erskine, director of reemployment and retraining, have failed to materialize on the production line," the editorial states, continuing "His statement confirms many reports of bitter disappointment when amputees compared what was offered them with what the morale builders had promised. The manufacturers complain that skilled help is lacking. The principal trouble seems to be a lack of imagination and enterprise. Here is a problem involving the honor of the government and of the whole people, a problem where expense is no object."

Dr. Martha Eliot First Woman President of the American Public Health Association

Dr. Martha M. Eliot, associate chief of the Children's Bureau, will become the first woman president of the American Public Health Association in its seventy-five years of history, following her appointment as president-elect at the recent convention in Cleveland. She will take office at the 1947 session in Atlantic City next fall, the newly installed president being Dr. Harry S. Mustard, director of the DeLamar Institute of Public Health at Columbia University. Dr. Eliot was vice chairman of the United States delegation at the world health conference in New York. She is a Fellow of the American Medical Association, the American Academy of Pediatrics and the American Public Health Association. She is internationally known as a pioneer in the study and prevention of rickets.

National Drug Trade Conference Asks Tighter State Laws on Sleep Producing Drugs

The National Drug Trade Conference has asked for a tightening of state laws to prevent illegal use of sleep producing drugs such as the barbiturates, which are sedatives in action and frequently are prescribed by physicians to produce sleep or quiet nervous conditions. Dr. Austin Smith, director of the division of therapy and research of the American Medical Association, told the meeting of drug representatives, called to consider what controls should be requested, that the "potential harm" of such drugs is "habituation, suicide and possibly murder."

New Pox Disease Identified at National Institute of Health

Three scientists at the National Institute of Health are reported to have described and identified a new disease closely related to chickenpox and spotted fever, which has been named rickettsialpox. Considered the mildest of infections of its type, the disease was studied at or near a large housing development in New York by Drs. Robert J. Huebner and Charles Armstrong and Miss Peggy Stamps, bacteriologist.

Council on Medical Service

NORTH CENTRAL MEDICAL CONFERENCE

The annual meeting of the North Central Medical Conference this year was coordinated with the regional meeting of the Council on Medical Service. The meeting was held in St. Paul on Sunday, November 10. The conference president, Dr. J. D. McCarthy of Omaha, acted as chairman for the day.

Although it was but a one day meeting, many subjects and problems were presented and discussed. The speakers and subjects were:

"The American Medical Association as an Instrument to Advance the Ideals of American Medicine," Dr. J. D. McCarthy, Omaha.

"Public Relations of the American Medical Association," Thomas A. Hendricks, Secretary, Council on Medical Service, A. M. A.

"Medical Care in Rural Areas," Dr. L. W. Larson, Bismarck, N. D.

"National Legislation," Mr. J. W. Holloway Jr., Chicago, Director, Bureau of Legal Medicine and Legislation, A. M. A.

"The Council on Medical Service," Dr. E. J. McCormick, Toledo, Ohio, Chairman, Council on Medical Service.

"Prepayment Medical Care Plans," Dr. A. W. Adson, Rochester, Minn., member of the Council on Medical Service, A. M. A.

"United Mine Workers Health Fund," Dr. C. M. Peterson, Secretary, Council on Industrial Health, A. M. A.

"Medical Care for the Veteran," Dr. G. D. Williams, Veterans Administration, Washington, D. C.

"Hospital Survey and Construction Program," Dr. Herman E. Hilleboe, Assistant Chief, Bureau of State Services, U. S. P. H. S., Washington, D. C.

The following officers were elected to serve the North Central Conference for the coming year:

President, Dr. William Duncan, Webster, S. D.
President-Elect, Dr. A. W. Adson, Rochester, Minn.
Secretary-Treasurer, R. R. Rosell, St. Paul.

Coming Medical Meetings

American Medical Association House of Delegates Supplemental Session, Chicago, Dec. 9-11. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.
Conference of State Secretaries and Editors, Chicago, Dec. 7-8. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Dermatology and Syphilology, Cleveland, Dec. 7-12. Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo, N. Y., Secretary.
American College of Surgeons, Cleveland, Dec. 16-20. Dr. Dallas B. Phemister, 40 E. Erie St., Chicago 11, Secretary.
American Society of Anesthesiologists, New York, Dec. 12. Dr. Curtiss B. Hickcox, 745 Fifth Ave., Room 1503, New York, Secretary.
Post Graduate Medical Assembly of South Texas, Houston, Dec. 3-5. Dr. M. B. Stokes, 229 Medical Arts Bldg., Houston, Secretary.
Puerto Rico, Medical Association of, Santurce, Dec. 13-15. Dr. Rafael A. Vilar, P. O. Box 3866, Santurce, Secretary.
Radiological Society of North America, Chicago, Dec. 1-6. Dr. Donald S. Childs, 607 Medical Arts Bldg., Syracuse 2, N. Y., Secretary.
Southeastern Allergy Association, Atlanta, Ga., Jan. 18-19. Dr. Katharine B. MacInnis, 1515 Bull St., Columbia 49, S. C., Secretary.
Southern Surgical Association, Hot Springs, Va., Dec. 10-12. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.
Western Surgical Association, Memphis, Tenn., Dec. 5-7. Dr. Warren H. Cole, 1853 W. Polk St., Chicago 12, Secretary.

GOVERNMENT SERVICES

ARMY

SURGEON GENERAL ASKS YOUNG DOCTORS TO CONSIDER ARMY CAREERS

The War Department has authorized the commissioning of about 1,600 doctors in future integrations of Medical Corps officers. All doctors who received their medical education in the Army Specialized Training Program during the war have been given information regarding a career in the regular Army.

In letters sent November 15 to some 5,000 army doctors Major Gen. Norman T. Kirk, the Surgeon General, pointed out the professional advantages gained by practicing medicine in the peacetime regular Army. General Kirk said that the service offers thirty years of work in the field of medicine and its various specialties, which service will be devoted not only to active duty as doctors but to advance study in leading civilian medical schools when merited and in army general hospitals. An important point for doctors planning an army career is that younger men will be used entirely for professional assignments and training. Administrative positions are adequately provided from among the older officers. The army doctor begins to specialize in military medicine and surgery as soon as he enters the service. Complete and modern laboratories and medical equipment are available to him, and he is under the constant tutelage of experienced army doctors and prominent civilian medical scientists appointed as consultants to the Secretary of War through the Surgeon General. All applicants must be graduates of approved medical schools before they will receive consideration for commissions. The War Department has waived certain qualifications demanded of all army doctors, such as four years of medical studies and a year's internship in the case of ASTP trained doctors who received medical degrees under the accelerated program which required three years of medical study and nine months' internship. Approved internships, residency training and residency specialists training programs are in operation in army hospitals whereby a doctor trained in the abbreviated wartime program may enlarge on his education while receiving steady pay as an army doctor.

In considering the inducements offered by a career in the regular Army, General Kirk emphasized six principal points:

1. Professional assignments for those medical officers who desire them will be provided to the maximum extent possible.
2. Approved internships, mixed residencies and specialist residencies have been established in army hospitals.
3. Provision of specialist training in army hospitals and civilian institutons in order that regular army medical officers may qualify for the various American specialty boards.
4. Regular army medical officers will be encouraged to seek certification by the specialty boards.
5. Administrative training opportunities will be made available to those officers interested in administrative or tactical unit assignments.
6. Medical officers will be relieved to the maximum extent of tactical and administrative assignments for purely professional work.

The initial annual salary received by a first lieutenant is $3,804 if he has dependents and $3,372 if he has no dependents. The annual salary received increases with length of service and higher rank.

FOOD TASTERS AID IN RESEARCH ON FOODS

At the Quartermaster Food Institute for the Armed Forces, Chicago, under the guidance of a civilian committee, subsistence experts are endeavoring to find foods with satisfactory military requirements, utilizing carefully selected food tasters to help in the research. They have found that about 20 persons out of 100 have taste perceptions so accurate that they can tell the difference between canned bread that has been stored for two weeks at 70 F. and a similar item stored for the same length of time at 100 F. Some persons, the tests revealed, cannot distinguish the difference between a glass of clear water and one heavily saturated with quinine. A good taster, the experts say, will be right 12 or 13 out of 15 trials. The taste testing program is another step in research directed toward the goal of making foods more acceptable.

The Quartermaster scientists are endeavoring to learn which foods will retain their original characteristics longest and under high storage temperatures. They want to know which types of food are best, which types of container are preferable and whether foods maintain their stability better when vacuum packed or packed in inert gases. Highly qualified tasters are necessary for this work. Chemistry will indicate what changes have taken place in a food, but it will not reveal how these changes affect the human taste.

Another phase of food tasting conducted at the Quartermaster laboratories is testing items for preference. This problem involves the food preferences of all the men in the military service. To obtain percentages of preference, the scientists are employing large groups of testers not screened for their keenness of perception. Field ration items have been submitted to large messes at military installations and specialized items for sick or canvalescent personnel have been tested at army hospitals. The testing goes on continuously on fresh meats, vegetables and fruits, canned foods of all kinds and frozen foods.

RARE MANUSCRIPT AT ARMY MEDICAL LIBRARY

Probably the only manuscript extant of three medical works by the great Italian physician of the thirteenth century Taddeo Alderotti de Florentie is now on display in the Army Medical Library, Washington, D. C. This manuscript, written about 1375, is bound in three volumes, with rubrication in red and blue. Taddeo was the founder of the dialectical method in medicine. He was regarded as the most illustrious physician of all Italy, and it is possible that Dante, who immortalized him, attended his lectures at Bologna. Taddeo originated the form of medical literature called Consilia, a collection of clinical cases which had considerable vogue up to the end of the seventeenth century.

AVIATION MEDICAL EXAMINERS

Fifty-five officers of the Medical Corps graduated from the course for aviation medical examiners at the School of Aviation Medicine, Randolph Field, Texas, on October 19. The exercises included also musical selections by the 633d AAF band. The nine weeks course is designed to instruct AAF medical officers to be proficient in the special duties required of an aviation medical examiner, to familiarize them in the coordination of such duties with other professional and nonprofessional activities which they may be called on to perform and to indoctrinate them in flying training.

BRIGADIER GENERAL REINARTZ RETIRES

After twenty-nine years of military service, Brig. Gen. Eugen C. Reinartz, former commandant of the AAF School of Aviation Medicine, Randolph Field, Texas, will retire from active service with the Army. General Reinartz was assigned to the Aeronautics Division of the Aviation Section, Signal Corps, in 1919, and he has had continuous service with aeronautics since that date. He went to the North African and English theaters of war as aeromedical observer to study the problems confronting the flight surgeons in combat. In 1943 he received the John Jeffries Award for exceptional contributions to the advancement of aeronautics through medical research, given by the Institute of Aeronautical Sciences. He has had the longest continuous service of any medical officer assigned to the Army Air Forces, having known no other service in his entire army career.

Dr. and Mrs. Reinartz will make their home at 1518 Hearst Avenue, Berkeley 3, Calif. He contemplates entering private practice in neuropsychiatry in the San Francisco area.

ARMY AWARDS AND COMMENDATIONS

Lieutenant Colonel Harold B. Hermann

The Bronze Star Medal was recently awarded to Lieut. Col. Harold B. Hermann, M. C., U. S. Army, Brooklyn, for meritorious achievement at Okinawa, Ryukyu Islands, from May 20 to Sept. 2, 1945 in connection with military operations against the enemy. In recounting his services the citation stated that, "as commanding officer of a station hospital, Lieutenant Colonel Hermann established a 400 bed hospital unit with maximum efficiency despite enemy air attacks and heavy rains which delayed the unloading of medical supplies and equipment. When the hospital was designated as the army evacuation center for Okinawa he performed this additional mission in such an outstanding manner that over 5,000 patients were processed and dispatched to rear areas without fatalities or serious mishaps. He demonstrated exceptional leadership and resourcefulness in maintaining high morale among both patients and staff and in making emergency improvisations to alleviate the overflow conditions which often existed. By his outstanding professional knowledge, administrative ability and devotion to duty, Lieutenant Colonel Hermann contributed substantially to the safe and efficient evacuation of sick and wounded army personnel from Okinawa and to the hospitalization program for that area." Dr. Hermann graduated from New York University College of Medicine, New York, and entered the service April 5, 1941.

MISCELLANEOUS

CAMPAIGN FOR FUND FOR NURSES MEMORIAL

The campaign to raise at least $2,500,000 for the Nurses National Memorial began throughout the country November 17. The memorial will be a tribute to the nurses who served in World War II and particularly to the 196 women of the Army Nurse Corps who lost their lives in the war. The campaign will continue until after New Years, and contributions will be sought from all citizens.

The memorial, to be erected in Washington, will be a home and center for upward of 100,000 women who will be eligible to use its facilities. The memorial will provide sleeping accommodations for at least 300 women, a lounge, library, assembly rooms, and dining and kitchen facilities.

Arthur H. Johnson, the national chairman, announced from the headquarters at 825 Woodward Building, Washington, D. C., that contributions will be sought from all citizens. In communities where chairmen have been established, these donations can be given to the local committee; otherwise they can be sent to National Headquarters in Washington. Thousands of hospitals, stores and other establishments will accept contributions by coin collectors or other means.

The memorial has been widely endorsed by leaders in all walks of life. One of the more recent additions to the list of sponsors is Cardinal Joseph Francis Spellman. At the recent meeting of Army chaplains in Washington, assembled for the sixteenth annual convention, the Chaplains Association of the Army and Navy unanimously endorsed the Nurses National Memorial campaign and urged all chaplains to lend their support to the project.

MEDICAL OFFICERS NEEDED FOR INDIAN SERVICE

The Department of the Interior announced on November 8 that medical officers were urgently needed for duty in the U. S. Indian Service. Preference will be given to former military personnel and federal employees. The entrance salary for recent graduates is $4,149.60 and for those who have had additional experience or special training $4,902 per annum.

Applicants must be graduates of an approved medical school and have successfully completed at least one year of internship in an approved hospital or its equivalent. Applicants must be American citizens and in good physical condition, but physical requirements are not as high as for the Army or Navy. When vacancies occur in the higher grade positions, promotions are made within the service whenever practicable. Government-furnished quarters are usually available at a cost of about $25 to $40 per month, and food costs are about the same as in any comparable rural area.

The Indian Service furnishes a unique complete medical service to Indian beneficiaries of all ages, mostly in rural areas within the United States and to the native population of Alaska. Appointments may be made to a hospital position or to a general practice on reservations. Most of the vacancies lie in the states west of the Mississippi River. Applicants may express a preference as to location. Appointments in Alaska have a 25 per cent differential in addition to base pay, and transportation of the appointee and his family and personal effects from place of actual residence to assignment in Alaska is paid by the government.

Interested physicians are urged to write to the Office of Indian Affairs, Merchandise Mart, Chicago 54, for further details and application forms.

PUBLIC HEALTH SERVICE

MEDICAL OFFICERS RELEASED FROM SERVICE

U. S. Public Health Service headquarters reports that the following medical officers have been terminated, inactivated, or retired, and directed to proceed to the city opposite their name:

Berman, Irving L., Senior Assistant Surgeon (R), Newton Center, Mass.
Callahan, Neil, Senior Assistant Surgeon (R), New Orleans.
Caplan, Sheldon M., Senior Assistant Surgeon (R), Chester, Pa.
Dillon, Milton, Assistant Surgeon (R), Jamaica, N. Y.
Di Pasca, Robert V., Senior Assistant Surgeon (R), Bronx, N. Y.
Dowdy, Kemp H., Senior Assistant Surgeon (R), Everett, Wash.
Eckberg, Edward M., Senior Assistant Surgeon (R), Galva, Ill. (inactivation).
Flick, Edward, Assistant Surgeon (R), Philadelphia.
Greer, Walter G., Senior Assistant Surgeon (R), Los Angeles.
Hruby, Allen J., Assistant Surgeon (R), Chicago.
Katz, David, Senior Assistant Surgeon (R), Clayton, Mo.
Ligon, Charles H., Assistant Surgeon (R), Brinklow, Md.
Lubitz, Joseph M., Surgeon (R), Milwaukee.
Marciano, Charles A., Surgeon (R), Brooklyn.
Miller, Arthur C., Senior Assistant Surgeon (R), Santa Rosa, Calif.
Olansky, Sidney, Senior Assistant Surgeon (R), Durham, N. C. (inactivation).
Rush, Willett H., Senior Assistant Surgeon (R), Versailles, Ky.
Rutecki, Vincent, Senior Assistant Surgeon (R), Buffalo.
Shack, Munroe E., Senior Assistant Surgeon (R), Somerset, N. J.
Taylor, Carl E., Assistant Surgeon (R), Cincinnati.
Treat, Michael R., Senior Assistant Surgeon (R), Philadelphia.
Van Camp, Wesley, Surgeon (R), Pueblo, Colo.
Waring, Clarence H., Medical Director, Pass Christian, Miss (retirement).
Williams, Ford S., Surgeon (R), New Orleans.
Woloshin, George, Assistant Surgeon (R), New York.
Woodard, Robert L., Senior Assistant Surgeon (R), Louisville.
Wright, Samuel, Senior Assistant Surgeon (R), Mauricetown, N. J.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Cleveland, Parish B.	Ensley
Dilworth, Edwin E.	Jasper
Dozier, Jack L.	Chance
Floyd, Cyril F.	Phenix City
Neely, William J.	Selma
Phillippi, Frank M. Jr.	Camden
Pye, Robert L.	Montgomery
Rouse, Ernest T. Jr.	Auburn
Thompson, William D.	Altoona

Arkansas

Boyle, Robert W.	Little Rock
Churchill, Calvin A.	Batesville
Nicholson, James L.	Fort Smith
Ross, Wallis A.	Arkadelphia
Sadler, Deane L.	Little Rock
Scarborough, William R.	Clarkesvile
Wilkes, Elbert H.	Little Rock
Woodcock, William A. Jr.	Hot Springs
Wright, Jack	Hot Springs

Arizona

Mayne, Richard H.	Miami
Snapp, Robert H.	Tucson

California

Ariaudo, John A.	Burbank
Borden, Craig W.	Marysville
Bothereau, Narcisse R.	S. Pasadena
Bryan, Eugene K.	Oakland
Dieterich, John P.	Glendale
Chambers, Ewan B.	Santa Monica
Chock, Chong A.	Los Angeles
Colby, Eric F.	Bakersfield
Commons, Robert R.	Los Angeles
Dingacci, Alphonse J.	Santa Clara
Dodge, Douglas R.	Pasadena
Dowrie, James O.	Chico
Finch, Raymond B.	Covina
Gordon, Morris R.	San Francisco
Gosslee, John M.	Orange
Hallock, Glenn C.	Los Angeles
Hargus, Harry B.	Belmont
Hayman, Max	Compton
Jampolsky, Arthur J.	Long Beach
Johnson, Howard B.	Glendale
Kalick, Peter	Los Angeles
Karnofsky, David A.	Los Angeles
Kelley, James L. Jr.	San Diego
Kurlander, Leroy F.	Palm Springs
Lane, Alfred L.	Los Angeles
Lee, Frank W.	Sacramento
Leff, Walter	San Francisco
Lester, Milton L.	San Francisco
Lyon, Harvey B. Jr.	Lafayette
Masson, John McM.	Los Angeles
Mense, Jackson S.	Long Beach
Meyer, Robert W.	Palo Alto
Mulford, Winthrop F.	Montrose
Myers, William E.	San Fernando
Nickels, Thomas T.	San Francisco
Oier, George W.	Berkeley
Peckham, George M.	Oakland
Porter, George W.	Modesto
Quillinan, Robert H.	San Francisco
Read, John M.	San Francisco
Redding, Marion D.	San Diego
Redner, Leo R. Jr.	Sunset Beach
Ricker, John H.	Berkeley
Robinson, Francis L.	San Francisco
Rubin, Henry J.	Los Angeles
Russell, Richard S.	Oakland
Sanborn, Alvin L.	Los Angeles
Scandalis, Paul K.	Los Altos
Schmidt, Clarence C.	Loma Linda
Schneider, Irvin J.	Sacramento
Schomaker, Theodore P.	San Francisco

California—Continued

Sears, William N.	San Francisco
Shaffrath, Max D.	Berkeley
Shery, Kurt T.	Los Angeles
Singhoff, Arno W.	Oakland
Skorin, John J.	San Pedro
Smith, Edmund L.	San Francisco
Spaulding, Clarence A. Jr.	San Francisco
Stanton, William W.	Long Beach
Stout, Joseph H. Jr.	Los Angeles
Thomas, Henry S.	Santa Cruz
Turner, James L.	Stockton
Van Horn, Philip R.	San Francisco
Wallace, Charles J. Jr.	Sacramento
Wallen, Ernest R.	San Francisco
Wasserman, David M.	Los Angeles
Weaver, Ralph M.	Long Beach
Weil, Hans J.	Altadena
Weiner, Herman	Los Angeles
White, Jess F. Jr.	Hollywood
Wilson, John A.	Los Angeles
Winn, Paul F.	Walnut Creek
Witherbee, Orville O.	Los Angeles
Yeakel, Earl L. Jr.	Orange
Yee, George	San Francisco

Colorado

Keller, Park D.	Pueblo
Larimer, Craig W.	Salida
Likes, Edwin C.	Lamar
Murray, Thomas A.	Denver
Parkinson, Edward C.	Denver
Prouty, Lawrence R.	Denver
Robinson, Lloyd W.	Denver
Rosenfeld, Eugene D.	Denver

Connecticut

Blake, William D.	New Haven
Brown, Lloyd	New Haven
Cheney, Roger H.	Manchester
Flaherty, Morgan V.	W. Hartford
Foster, Hollis J. Jr.	New Britain
Johnson, Maurice E. K.	W. Hartford
Katzin, Benjamin	Winsted
Roth, Oscar	New Haven
Schwartz, Raymond L.	West Stamford
Sigel, Harry	New Haven
Swirsky, Morgan Y.	New Haven
Thompson, Anthony J.	Hartford
Troy, William D.	Stamford
Uvitsky, Irving H.	Bridgeport
Weigel, Stanley J.	Danielson
Wessel, Morris A.	New London
Wright, Walter E.	Manchester

Delaware

Bartoshesky, Stephen W.	Wilmington
Chrzanowski, John A.	Wilmington
Livingston, William T.	Wilmington
Maguire, Vincent D.	Wilmington
Tosick, William A.	Wilmington

District of Columbia

Armstrong, Robert H. Jr.	Washington
Cobey, Milton C.	Washington
Dove, Samuel	Washington
Edwards, John A.	Washington
Ernst, Henry E.	Washington
Fegan, John B.	Washington
Haile, Robert C.	Washington
Hanby, John E.	Washington
Kenneth, Thos. J. Jr.	Washington
MacMurray, Frank G.	Washington
Madigan, Emmett P.	Washington
Martyn, Herbert E. Jr.	Washington
Mengarini, Ariel A.	Washington
Parks, Joseph A. Jr.	Washington

District of Columbia—Continued

Pistolas, Nicholas G.	Washington
Rowen, Bernard R.	Washington
Smith, Gordon M.	Washington
Suraci, Alfred J.	Washington
Young, Joseph R.	Washington

Florida

Armour, Thomas Jr.	Miami
Berry, John L.	Miami
Caudle, Richard S.	Lakeland
Chenoweth, Arthur I.	Daytona Beach
Coret, Irving A.	Miami
Cumming, Richard C.	Ocala
Ginsberg, Harold S.	Daytona Beach
Graham, Emil J.	Homestead
Medlin, John H.	Miami
Rodgers, Richard C.	Tampa
Ruskin, Joseph J.	Tampa
Scott, Joseph W.	Live Oak
Sweeley, William J.	Jacksonville
Wagenheim, Harry H.	Pensacola
Wells, James R.	Daytona Beach
West, John R. III	St. Petersburg
Wood, Arthur W. Jr.	Miami

Georgia

Arnold, Maurice F. Jr.	Macon
Ashford, John W.	Athens
Benson, William H. Jr.	Marietta
Brown, Hilton J.	Douglasville
McCain, John R.	Decatur
McKnight, Robert R. Jr.	Toccoa
Miller, Edward S.	Atlanta
Mixson, Edward H.	Augusta
Mullins, Dewitt F. Jr.	Rutledge
Perry, Ernest A.	Bethlehem
Pittman, Carl S. Jr.	Tifton
Price, Harry J.	Emory Univ.
Rankin, Joseph L. Jr.	Atlanta
Reynolds, Horace M.	Cairo
Roddenbery, Seaborn A.	Savannah
Rogers, Thomas E. Jr.	Macon
Rubin, Saul	Savannah
Shafferman, Samuel L.	Atlanta
Smith, Cason C.	Augusta
Smith, Melvin E.	Grantville
Steadman, Henry E.	Augusta
Sutker, Harold	Savannah
Traylor, James B.	Augusta
Waring, Antonio J. Jr.	Savannah
Weinstein, Alfred A.	Atlanta
Wilson, Clyde A. Jr.	Cordele
Wisdom, Wilbur D.	Chipley
Woodall, William P.	Thomaston

Idaho

Cutler, Royal S.	Preston
Murphy, Robert C.	Rupert

Illinois

Barsky, Sidney	Maywood
Beal, Robert L.	Chicago
Beamer, Parker R.	Urbana
Beinke, Victor H.	Chicago
Bernardi, Hugh	Highwood
Burke, Jerome L.	Argo
Chaplik, Seymour	Chicago
Chapman, Bernard M.	Chicago
Cope, Beverly A.	Chicago
Cress, Charles H. Jr.	Lombard
Curran, Edwin F.	Decatur
Dehn, Helmut M.	Chicago
Diffenbaugh, Willis G.	Chicago
Doerscheln, Wilbur J.	Chicago
Douglas, Ralph W.	Chicago
Fine, Herbert V.	Chicago

PHYSICIANS SEPARATED FROM SERVICE

Illinois—Continued

Furman, Jerome M.	Chicago
Gerber, Aaron B.	Chicago
Gorecki, Ferdinand	Chicago
Govostis, Michael C.	Chicago
Guyton, Willard A.	E. St. Louis
Henderson, Justus D.	Delavan
Horwitz, Mandel	Chicago
Johnson, Lent C. Jr.	Chicago
Isoe, Isadore M.	Chicago
Jubelt, Hilbert P.	Chicago
Juergens, Albert L.	Chester
Kasik, Otto	Chicago
Kernis, L.	Chicago
Kenny, James N.	Peoria
Klokke, Karl	Chicago
Kopriva, James W	Chicago
Kordecki, Frank A.	Chicago
Kowalski, Leonard F.	Evergreen Park
Kugel, Julius D.	Chicago
Lack, Herbert	Chicago
Lamb, Leonard	Cerro Gordo
Larzelere, Henry B.	Waukegan
Lehmann, Werner	Canton
Lloyd, Donald W	Murphysboro
McMahan, John H	Vienna
Madi, Risley J.	Chicago
Markin, Leo	Chicago
Meisenheimer, Martin P. III	Oak Park
Mizenberg, Edward	Chicago
Morgan, Edward H	Oak Park
Moss, Kenneth J	Decatur
Nalefski, Lester A.	Chicago
Narut, Leo F.	Chicago
Nissen, Edward	Chicago
Noble, Gene M.	Chicago
O'Neill, Coleman J.	Oak Park
Palka, Leonard J.	Cicero
Pelatowski, William J.	Chicago
Pertzovsky, Louis	Chicago
Peters, Clifford H.	Chicago
Peterson, Everett R. T.	Rockford
Phalen, George S.	Peoria
Philipsborn, Herbert F. Jr.	Chicago
Plattner, Edward B.	Chicago
Pleiss, Philip H.	Chicago
Polley, Theodore Z.	Joliet
Reiss, George I.	Chicago
Riley, James W.	Eureka
Rosenthal, Maurice J.	Chicago
Rubin, Louis	Rock Falls
Ruggie, Alexander	Chicago
Ruzich, Stanley E.	Chicago
Salk, Melvin R.	Chicago
Sansone, Vincent C.	Springfield
Shipley, James E.	Wilmington
Siegel, Irving	Chicago
Silber, Max N.	Chicago
Simmons, Marvin W.	Chicago
Smith, Robert H.	Evanston
Smith, Warren F.	Chicago
Snitman, Harry	Chicago
Sokoloff, Mitchell	Chicago
Sparer, Phineas J.	Danville
Sroka, Alexander G.	Calumet City
Stanmar, Stanley U.	La Salle
Starck, Carl D.	Palatine
Steinert, Lars E. T.	Chicago
Stormont, Marion F.	Chicago
Strick, Marvin H.	Chicago
Thompson, Robert G.	Maywood
Urbanek, Frank E.	Riverside
Victor, Alexander	Chicago
Vondrasek, Earl A.	Chicago
Ward, Louis E.	Mount Vernon
Webster, Frederick S.	Chicago
Weinberg, Jack	Chicago
Weston, Raymond E.	Chicago
Whalen, Joseph F.	Evanston
Wier, Vernon S.	Montgomery
Wiggins, Ira W.	Kankakee
Zekman, Theodore N.	Chicago
Zielinski, Victor J.	Chicago
Zummo, Bruce P.	Chicago

Indiana

Annan, Cornelius M.	Huntington
Baumann, Charles H.	Belleville
Boyd, Nelson E.	Freelandville
Bridge, Ezra V.	Westville
Cornell, Robert A.	Crawfordsville
Gohmann, Joseph T.	New Albany
Jones, Leslie M.	Mishawaka
Lohman, Robert M.	Ft. Wayne
Nutter, Wyndham H.	Rushville
Ravdin, Emile M.	Evansville
Reynolds, Fred C.	Indianapolis
Rhorer, William G.	Marion
Ridgway, Alton H.	Upland
Rissler, Ross W.	Indianapolis
Ruddell, Keith R.	Indianapolis
Rudicel, Max W.	Huntington
Sage, Charles V. Jr.	Indianapolis
Skahen, James K.	Elkhart
Thompson, Paul D.	Indianapolis
Van Meter, Cyril P.	Indianapolis
Wales, Homer L.	Indianapolis
Weitzel, Roland E.	Francisco
Wigent, Ralph D.	Indianapolis
Woolling, Kenneth R.	Indianapolis

Iowa

Blumenschein, John C.	Ames
Boyer, Ulysses S.	Davenport
Coddington, James H.	Humboldt
Ely, Lawrence O.	Guthrie Center
Griffith, Wylie H.	Adair
Knott, Peirce D.	Sioux City
Kroack, Kalman J.	New Albin
Laubscher, John H.	Iowa City
Leik, Donald W.	Dubuque
Mansheim, Bernard J.	Ft. Madison
Martin, Frank F.	Eagle Grove
Perkins, Rollin M.	Iowa City.
Posner, Edward R.	Des Moines
Ristine, Leonard P.	Mt. Pleasant
Sauer, Harold E.	Marshalltown
Schutter, John M.	West Bend
Smith, Delbert L.	Iowa City
Sweeney, Lloyd J.	Sioux City
White, Warren G. Jr.	Nevada
Wormhoudt, Herbert L.	Pella

Kansas

Buck, Ben H.	Wichita
Christian, Stanley J.	Kansas City
Collins, Francis T.	Concordia
Edwards, Francis L.	Wichita
Gough, James D.	Chanute
Grigsby, Kenneth R.	Medicine Lodge
Hoffer, John G. Jr.	Kansas City
Payton, Calvin W.	Arkansas City
Peterson, Birger E.	Assaria
Priddle, Harold D.	Wichita
Proctor, Lawrence A.	Parsons
Rasmussen, William C.	Kansas City
Schroeder, Sydney O.	Kansas City
Scimeca, Michael W.	Coffeyville
Smelser, Joseph E.	Topeka
Smiley, William A. Jr.	Junction City
Thierstein, Samuel T.	Whitewater
Williams, Charles L.	Wichita
Young, Fred C.	Kansas City

Kentucky

Adams, William R.	Lexington
Brewer, Carlos B.	Hopkinsville
Creekmore, Maurice A.	Pine Knot
Crudden, Charles H.	Richmond
Fowler, Merle W. Jr.	Irvine
Francis, Charles McG.	Bowling Green
Jackson, Richard G.	Danville
Jones, Edmund P.	Paducah
Keeling, William H.	Willisburg
Lawrence, William E.	Tompkinsville
Lecky, Jim H.	Calvert City
Pfahler, Charles V.	Latonia

Kentucky—Continued

Rose, Edgar K.	Landsaw
Sanders, Richard D.	Louisville
Shiflett, Emory L.	Louisville
Stephens, Wilson P.	Jenkins
Stevens, Elliott P.	Horton
Swain, Francis M.	Louisville
Vernon, Frank A.	Pikeville
Weems, Mallory P.	Louisville

Louisiana

Baranco, Donald J.	Lafayette
Buechner, Howard A.	New Orleans
Cohn, Samuel K.	New Orleans
De Lee, Stuart	Shreveport
Edelman, Joseph M.	Baton Rouge
Gibson, John W.	Peneville
Johnston, William J.	Rayne
La Haye, Philip W.	Mamou
Morrogh, Earl H.	Pineville
Pasquier, Claude M. Jr.	Shreveport
Rowe, Daniel H.	New Orleans
Sutton, Paul	New Orleans
Trufant, Samuel A. III	New Orleans
Tucker, Edwin W.	New Orleans

Maine

Lawrence, Homer E.	Bethel
Ouellette, Philippe W.	Lewiston
Schmidt, Lorrimer M.	Bethel
Schoch, Henry K. Jr.	Fryeburg

Maryland

Blumenthal, Stanley L.	Baltimore
Brumback, Joseph E. Jr.	Baltimore
Cohen, Frank S.	Baltimore
Doherty, Daniel L. Jr.	Baltimore
Klijanowicz, Stanley B.	Baltimore
Kueffner, William R.	Rockville
Loker, Frank F.	Baltimore
Mussenden, Glenford P.	Baltimore
Phifer, Theodore D.	Baltimore
Reid, Josiah J. R.	Hagerstown
Richardson, Edward H. Jr.	Baltimore
Sachs, James W.	Hancock
Sauber, Irving	Baltimore
Scarborough, Clarence P.	Towson
Sims, William S.	Frederick
Staton, Hilliard V.	Myersville
Stewart, Harold L.	Bethesda
Stimson, Allan B.	Chevy Chase
Suarez-Murias, Edward L.	Baltimore
Wachsman, Irvin L.	Baltimore
Webster, Thomas C.	Baltimore
Weeks, William E.	Baltimore
Wice, Louis E.	Baltimore
Williams, Charles H.	Owings Mills
Wolfe, William D.	Baltimore

Massachusetts

Buckley, Joseph F.	New Bedford
Burns, Herbert V.	Gloucester
Campbell, Elmore M.	Dorchester
Caradonna, Matteo	Everett
Cohen, Milton	Brookline
Covell, Lester L.	Woburn
Dalton, John T.	Braintree
Dexter; Chester J.	Belmont
Dine, Robert F.	Brookline
Du Toit, Charles H.	Boston
Gordon, George S.	Lynn
Greer, William E. R.	Boston
Hallowell, Phillips	Milton
Hatt, Rafe N.	Longmeadow
Hurley, Frank E.	Springfield
Kohn, Francis J.	Salem
Kranichuck, John M.	So. Hadley Falls
Leary, Howard L.	Jamaica Plain
Lepore, Anthony E.	N. Abington
Lyons, Melvin K.	Dorchester
Maroney, John A.	Worcester
Matloff, Jacob	Chelsea

PHYSICIANS SEPARATED FROM SERVICE

Massachusetts—Continued

Melucci, Edmond R.	Lawrence
Militzer, Raymond E.	Woburn
Milkey, Gustave P.	Montague City
Mittelman, Eugene	Boston
Myerson, David J.	Brookline
Nulsen, Frank E.	Boston
O'Brien, Paul A.	Revere
O'Connell, William T.	Roslindale
Olive, George M. Jr.	Belmont
Peacher, William G.	Boston
Pepe, Enrico A.	E. Boston
Regan, John E.	Roslindale
Robertson, Charles W.	Boston
Robinson, Roger W.	Grafton
Rubin, Julius	Canton
Rudman, Benjamin W.	Boston
Ryder, Brooks	N. Attleboro
Sarkisian, Sarkis A.	Bridgewater
Schwartz, Herman	Boston
Scola, James V.	Springfield
Shagoury, Charles J.	Brighton
Shand, Nathaniel K.	Fall River
Sherman, Allen I.	West Newton
Simon, Naif L.	Quincy
Spindler, James F.	Brighton
Stark, Richard B.	Boston
Stone, Chauncey M. Jr.	Boston
Thomas, Warren D.	Turners Falls
Tolnick, Bernard	Roxbury
Trapuzzano, John	Billerica Center
Tucker, Charles A.	Boston
Walker, Robert T.	Newton Centre
Wang, Richard P.	Boston
Weiner, Albert E.	Chestnut Hill
Wexler, Jack	Mattapan
Whitham, Elmer L.	New Bedford
Wiedeman, George H.	Leominster
Wilson, Norman L.	Boston
Wolston, Edward C.	Springfield
Yood, Bernard	Roslindale
Zaff, Fred	Chelsea
Zovickian, Anthony	Watertown

Michigan

Bannow, Robert J.	Mt. Clemens
Barris, Ralph W.	Grand Rapids
Beukema, Marenus J.	Grand Rapids
Boyce, George H.	Iron Mountain
Brown, Nathan	Detroit
Bunce, Leo W.	Trufant
Claver, Randall W.	Zeeland
DeMay, John D.	Jackson
Gordon, Benjamin F.	Newaygo
Grant, Abraham H.	Detroit
Hartkop, Henry H.	Detroit
Iacobell, Peter H.	Detroit
Kambly, Arnold H. Jr.	Ann Arbor
Leipsitz, Louis S.	Detroit
Matthews, John I.	Detroit
Nunemaker, John C.	Ann Arbor
Okamura, Ichiro D.	Detroit
Olesky, Stanley P.	Jackson
Patterson, Adonis	Battle Creek
Randall, David S.	Albion
Rufus, Howard C.	Ann Arbor
Scheibe, John R.	Grand Rapids
Sears, Charles H.	Beulah
Shaffer, Joseph H.	Detroit
Shulman, Herschel A.	Detroit
Simpson, Gordon E.	Detroit
Taylor, Aaron	Detroit
Ting, Sik Woo	Detroit
Vandermeer, Ray	Grand Rapids
Walton, Clarence H.	Detroit

Minnesota

Aldes, John H.	St. Paul
Arzt, Philip K.	St. Paul
Brown, Schuyler P.	Minneapolis
Burklund, Edwin C.	Minneapolis
Burseth, Edgar C.	St. Paul

Minnesota—Continued

Erdal, Ove A.	Bricelyn
Eustermann, John J.	Lewiston
Gordon, Jack	Minneapolis
Gorsuch, Melvin T.	Rochester
Kirklin, John W.	Rochester
McKibbin, John P.	Rochester
McLaughlin, Byron H.	Minneapolis
Orr, Burton A.	Faribault
Papermaster, Ralph	Minneapolis
Pearson, Donald J.	Rochester
Pelant, Kenneth F.	Owatonna
Peterson, Kenneth A.	St. Paul
Rudolph, Frank A.	Red Wing
Sanford, Raymond A.	Rochester
Schmid, John F.	Worthington
Schoeneberger, Paul B.	Perham
Thorough, Paul H.	Luverne
Uihlein, Alfred	Rochester
Zachman, Leo L.	St. Paul

Mississippi

Abraham, Leo M.	Port Gibson
Bethea, Ralph C.	Jackson
Friday, Walter C. Jr.	Starkville
Latham, Marvin W. Jr.	Macon
McLean, David W.	Meridian
Mills, Miriam	Brookhaven
O'Neal, Kelly R.	Saucier
Sproles, James A. Jr.	Columbia
Tabb, Harold G.	Greenwood
Warner, William C.	Grenada

Missouri

Bradford, Arville W.	St. Joseph
Cain, Ivan W.	Kansas City
Daman, George A.	St. Louis
Delaney, Joseph H.	Columbia
Dixon, John B.	Kansas City
Dunagin, James L.	Decatur
Graham, John G. Jr.	University City
Haddock, James N.	Cape Girardeau
Hoeper, Samuel D.	Rich Hill
Jones, Richard A.	St. Louis
King, Eustace E. III	Overland
Lewis, James E. Jr.	Mountain Grove
McCormick, James E.	Kansas City
Park, William I. Jr.	St. Louis
Petry, James L.	St. Louis
Ridings, Harold D.	Kennett
Robertson, Frank G.	St. Louis
Russi, Simon	St. Louis
Sawyer, John B.	St. Louis
Tichenor, Robert W.	Sappington
Wallace, Edgar S.	Old Mines
Wiege, Eugene	Richmond Heights
Woods, Walton C.	Kansas City
Wooldridge, Wilfred E.	Springfield
Yore, Richard W.	Brentwood

Montana

Brann, Joe E.	Great Falls
Harpole, Gerald T.	Deer Lodge
Layne, John A.	North Great Falls
Soltero, Harry R.	Lewistown
Steinberg, Samuel S.	Butte

Nebraska

French, Ivan M.	O'Neill
Gilbert, Louis W.	Beatrice
Gray, William	Omaha
Hebert, Frederick M.	Omaha
Lindell, Nels H.	Omaha
Mutz, Austin E.	Lincoln
Otto, Claude W.	Aurora
Rudersdorf, Howard E.	Omaha
Rush, Weaver A.	Beatrice
Sjoding, Jennings D. M.	Omaha
Smalldon, Ted R.	Omaha
Smiley, Richard H.	Lincoln
Smith, Edward J.	Omaha

Nebraska—Continued

Smith, Richard D.	Omaha
Synovec, Emil	Pierce
Westover, Joseph L. Jr.	Valentine
Wurtz, Reginald M.	Hartington

Nevada

Jensen, Peter S.	Reno
Pasutti, William E.	Sparks

New Hampshire

Macek, John F.	Manchester
Perron, Frank E. Jr.	Manchester
Stevens, Clark W.	North Stratford

New Jersey

Banks, Albert L.	Somerville
Blake, Albert J.	Paterson
Blanchard, William H.	Ocean Grove
Butz, Robert A.	Maplewood
Colavitz, James J.	Trenton
Fassino, Anthony J.	Irvington
Grant, Charles P.	Bloomfield
Headrick, Elmer O. Jr.	Haddonfield
Helden, Gerard O.	S. Orange
Hoffman, John B.	Rahway
Hunter, Robert	Delanco
Iannone, Angelo B.	Orange
Imhoff, Robert E.	Hammonton
Irmisch, George W.	Columbus
Kuhn, William G.	Highland Park
Lemkin, Sam	Newark
Mc Afoos, Louis G. Jr.	Merchantville
Mark, Donald D.	Jersey City
Novak, Edward J.	Sewaren
Parell, George C.	Newark
Perlman, Maximilian	Newark
Pinck, Bernard D.	Passaic
Plum, Stephen H. M.	Morristown
Ram, Nathan H.	Caldwell
Reed, Franklin L. Jr.	Westfield
Riordan, John P.	S. Orange
Robinson, Jay A.	Trenton
Rosenblatt, Max B.	Elizabeth
Rossman, Isadore	Newark
Rubens, Otto	Dover
Schaff, Royal S.	Newark
Schimel, John L.	Jersey City
Schirmer, William J.	Hillside
Schneckendorf, Samuel J.	Jersey City
Sciorsci, Mario E.	Hoboken
Scovern, Louis	Passaic
Shapiro, Samuel A.	Newark
Sinderbrand, Robert E.	Atlantic City
Smith, Louis S.	Newark
Stone, William	Passaic
Strauss, Frederick	Newark
Vesce, John J.	Ridgewood
Wagener, William L. Jr.	Atlantic City
Watson, Walter B.	Belleville
Winokur, Gerald L.	Jersey City
Wolfram, Julius	Somerville
Zheutlin, Harold E. C	Jersey City

New Mexico

English, Frank A.	Carrizozo
Greeley, Robert H.	Deming
Lamon, John D. Jr.	Albuquerque

New York

Abbene, Michael M.	Brooklyn
Alfano, Paul A.	Buffalo
Anziano, Samuel J.	Garden City
Audioun, Legrand J.	Rockville Center
Bachrach, Louis	Brooklyn
Bauer, Irving L.	Brooklyn
Beal, John M.	New York
Beaty, John T.	New York
Beauregard, John F.	Brooklyn
Benivegna, Salvatore L.	Brooklyn

PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

Berne, Robert M.	New York
Bevilacqua, Rocco P.	Woodhaven
Biel, Paul	Babylon
Blaine, Graham B. Jr.	New York
Block, Nathan	New York
Bloom, Marvin L.	Buffalo
Blum, Gilbert	Brooklyn
Blum, Robert	Buffalo
Boldt, Martin H.	New York
Brandetsas, Peter G.	Palmyra
Brandt, Jay L.	Brooklyn
Brown, Seymour M.	Brooklyn
Brundage, Franklin	Huntington Sta.
Buell, William O.	New York
Campanella, Santo D.	Astoria
Champlin, Frederic B.	White Plains
Chidsey, Andrew D. III	Syracuse
Codik, Nicholas R.	New York
Cohen, Irvin J.	Brooklyn
Colangelo, William V.	Long Island City
Coon, Donald F.	Syracuse
Decker, David G.	Pittsford
Del Giorno, Thomas E.	Floral Park
Del Junco, Gerard W.	Rochester
Derman, Herbert	Brooklyn
Dirienzo, Vincent L.	Elmhurst
DiTraglia, Frank J.	Bronx
Dunn, William H.	New York
Dworetzky, Murray	New York
Eagle, Henry R.	New York
Ernst, Alfred R.	Jamaica
Escher, George C.	New York
Fletcher, Archibald G. Jr.	New York
Friedland, Elmer	Buffalo
Friedman, David	Brooklyn
Friedman, Murray M.	New York
Fulkerson, Lynn L. Jr.	New York
Galitz, Eli	Brooklyn
George, William B.	Verona
Ginzler, Arthur M.	New York
Giorlando, Stephen W.	Brooklyn
Glenn, Abraham G.	Bronx
Goldensohn, Leon N	New York
Gordon, Irving	Flushing
Gordon, Kenneth Jr.	Rensselaer
Gorlin, David O.	Ozone Park
Groopman, John	Mineola
Gross, Jerome	New York
Haber, Norman	Buffalo
Hadley, Carmer	Glens Falls
Haft, Abraham S.	New York
Halpern, Mordecai	New York
Handler, Joel S.	Long Island
Harmon, Jules	Brooklyn
Harrison, Irving B.	Utica
Heineman, Thomas H.	Hamburg
Hertz, Simon	New York
Heymann, Hans	Forest Hills
Hollander, Bernard	New York
Horwitz, William H.	Rochester
Hunt, Charles C.	Bronx
Igel, Leo	Brooklyn
Inwood, Louis R.	Brooklyn
Irwin, Robert J. A.	Buffalo
Ives, Charles K.	Roxbury
Jackson, Irving	New Rochelle
Jacobs, Ralph	New York
Jeannopoulos, Achilles L.	New York
Jervis, George A.	Thiells
Johnstone, William C.	Lynbrook
Joseph, Solomon	Bronx
Kalman, Manuel	Bronx
Kammer, John W.	Rochester
Kantrowitz, Felix A.	New York
Karpas, Jules L.	Brooklyn
Katz, Henry E.	New York
Keenan, William S.	Buffalo
Keniston, Allen H.	Port Jervis
Kent, Edwin H.	New York
Kertzner, Leonard	Brooklyn
Keschner, Harold W.	New York

New York—Continued

Kirkwood, George M.	Syracuse
Kirschenfeld, Jack	Brooklyn
Klein, Emil F.	New York
Klein, Milton	Far Rockaway
Kleinman, Abraham M.	Brooklyn
Klements, Joseph	Forest Hills
Krischer, Meyer I.	Brooklyn
Kuntz, Julius A.	Thiells
Kuschner, Marvin	Brooklyn
Ladue, William L.	Plattsburgh
Lambert, Bruno B.	Corona
Lamberti, Thomas G.	Arcade
Lee, Stanley L.	Far Rockaway
Leeds, Hans W.	Binghampton
Leff, Irving L.	Brooklyn
Lehmann, Walter X.	New York
Leibowitz, Sidney	New York
Leshin, Seymour	New York
Levitt, Harry	Watertown
Levy, Jack H.	New York
Lewin, Michael	New York
Lippold, William E.	Brooklyn
Littlejohn, Robert E.	New York
Livingston, Sidney R.	New York
Longo, Vincent F.	Cedarhurst
Lord, Benjamin J. Jr.	New York
Lusardi, Eugene J.	Brooklyn
McLaughlin, Edward F.	Lynbrook
MacLeod, Duncan K.	Buffalo
MacMillan, Ralph M.	Brooklyn
McNulty, Roland J.	Staten Island
Macomber, Walter B.	Albany
Maggio, Edward V.	Brooklyn
Martin, William F.	Glen Cove
Mayka, Stephen	Rochester
Meer, Nadhim E.	Forest Hills
Mellicker, Martin C.	New York
Mendonsa, Lawrence E.	New York
Meyers, Paul T.	Forest Hills
Milberg, Irving L.	New York
Miller, George R.	Rochester
Modlin, Hyman J.	Brooklyn
Musacchio, Frank	Brooklyn
Myers, James M.	Valatie
Neimand, Karl M.	Flushing
Ninfo, John C.	Rochester
Norris, John L.	Dongan Hills
O'Neill, Earl A.	New York
O'Rourke, James J.	New York
Ostrowski, Joseph P.	Utica
Owen, William F. Jr.	Schenectady
Packer, Max I.	New York
Palmer, Harris H.	White Plains
Panio, Joseph	Bronx
Paradis, Harold D.	New York
Pearce, James F.	Alexandria Bay
Peelor, Robert A.	Poughkeepsie
Perman, Abraham H.	New York
Piliero, Pasquali P.	New York
Pleskow, Adrian J.	Buffalo
Plimpton, Calvin H.	New York
Prince, Ralph W.	Rochester
Quimby, James E.	Albany
Rabinowitz, Alex	Bronx
Rabkin, Boris	Brooklyn
Raicus, Eugene	Jamaica
Rabinowitz, Yale	Brooklyn
Ralyea, John R.	Kenmore
Randolph, Stephen H.	Rome
Ray, John H. III	Dongan Hills
Raynolds, Arthur H.	New York
Reel, John J.	Rensselaer
Reilly, Edward T.	Brooklyn
Richards, William R.	New York
Richman, Daniel P.	New York
Ripley, George S. Jr.	Mt. Vernon
Roberts, Dudley A.	New York
Roberts, Warren C.	Rockville Center
Rosenhaus, Harold	Brooklyn
Rosenthal, Ira M.	Brooklyn
Rothstein, Sidney N.	New York

New York—Continued

Rottkov, Abraham	Brooklyn
Ruggiero, Anthony J.	New York
Ruggio, Joseph D.	New York
Russo, Daniel E.	Flushing
Russo, John R.	New York
Rutherford, Morrison	New York
Sahn, Stanley H.	Brooklyn
Saliani, Nicholas	New York
Sanders, Norbert	New York
Scalzo, John J.	Brooklyn
Scarano, Christopher A.	Bronx
Schiess, William A.	Solvay
Schlamowitz, Samuel T.	Brooklyn
Schmookler, Albert	Brooklyn
Schneider, Kurt W.	New York
Schneller, Leo	Jamaico
Schottenfeld, Aaron	Bronx
Schulan, Irving	Syracuse
Schultz, Martin	Brooklyn
Schuyler, Samuel A.	New York
Schwartz, Jerome	Bronx
Schwartz, Ralph M.	Brooklyn
Schwartz, Sandor A.	Flushing
Schwinger, Robert	New York
Seidenberg, Robert	Syracuse
Seides, Jerome M.	Brooklyn
Seligmann, Erich	Whitehall
Selverstone, Bertram	New York
Seneca, Harry T. A.	New York
Shaw, Wallace M.	Yonkers
Sheckman, Edward	Forest Hills, L. I.
Shedrovitz, Belle C.	New York
Shey, Herbert H.	Far Rockaway
Siegel, Henry	Astoria, L. I.
Siegel, Marvin S.	Brooklyn
Simms, Leon M.	Brooklyn
Sirota, Harvey H.	Brooklyn
Smith, Willard L.	White Plains
Snider, Benneth L.	Binghampton
Sobel, Harold	Brooklyn
Sopey, Victor M.	Long Beach
Speer, David S.	Bronxville
Spielberg, Ignaz	New York
Spitz, William C.	Brooklyn
Steed, Leonard L.	Binghampton
Stein, Irwin	Mount Vernon
Steinitz, Gerard	Fulton
Stempel, Bernard	Bronx
Sternhill, Bernard	Brooklyn
Stillger, Walter M.	Hicksville
Strobino, Erastus E.	Rochester
Surks, Sylvan N.	New York
Swartz, Irving	Syracuse
Swenson, Sven A.	Brooklyn
Tarantola, Paul I.	Brooklyn
Taylor, Gilbert H.	New York
Teichner, Herbert Z.	New York
Thompson, John E. Jr.	Albany
Thompson, Robert C.	New York
Tomlinson, David R.	Watervliet
Toppin, Kenneth L.	New York
Uhry, Edmond Jr.	New York
Ulin, Robert	Brooklyn
Ullman, Robert A.	Buffalo
Valente, Vincent J.	Staten Island
Valergakis, Frederick E. G.	Brooklyn
Verzeano, Marcel	New York
Vetter, John J.	New York
Vinograd, Abe	Brooklyn
Vogel, Stanley S.	Brooklyn
Wagner, Edward J.	New York
Warren, Stafford L.	Rochester
Watkins, Melvin B.	New York
Weinberg, Abraham	Margaretville
Weiner, Irwin	Brooklyn
Weiner, Murray	Bronx
Weiss, Edward J.	Poughkeepsie
Werlin, Samuel J.	Troy
Westmoreland, Robert E.	New York
Weston, Lanpher C.	Rochester
Wetherell, Frederick E.	Syracuse

PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

Whitman, Morris B.	Bronx
Wilkens, Robert	Bronx
Wilkes, Frederick B.	Buffalo
Winer, Julius H.	New York
Winslow, Thomas S.	New York
Wirth, Lothar	Rensselaer
Wishnow, Hyman L.	Flushing
Woeppel, Charles J.	Buffalo
Wohl, Hyman	New York
Wolff, Eugene F.	Newburgh
Wolinsky, Allan Y.	New York
Wulwick, Michael	Brooklyn
Zambron, Stanley J.	Lackawanna
Zatuchne, Samuel	Brooklyn
Zavoyianis, Savas	Brooklyn
Zeidberg, Louis D.	Forest Hills
Zeltmacher, Kurt	Woodside, L. I.
Zirlinger, Otto	New York
Ziselman, David L.	Brooklyn
Zucker, Albert	New York
Zuckerbrod, Morris	Bronx

North Carolina

Booth, Orin W.	Durham
Clarke, Eugene H.	Greensboro
Hendrick, Harry V.	Cliffside
Hunter, John G.	Greensboro
Kinlaw, James B.	Elizabethtown
McDevitt, John B.	Charlotte
McNeill, Claude A. Jr.	Elkin
Neill, Robert C.	Durham
Parrott, William T. Jr.	Kingston
Reinhardt, James F.	Durham
Ringer, Paul H. Jr.	Asheville
Royster, Thomas S. Jr.	Henderson
Rubin, Adrian S.	Greensboro
Smith, David C.	Lexington
Stone, Robert E.	Chapel Hill
Wheless, Thomas O.	Louisburg
White, Donald P. Jr.	Sanford
Wickman, William	Winston-Salem
Wilder, Raboteau T.	Glen Alpine
Womble, Edwin C.	Wagram
Wright, James T.	Shawboro
Wright, Richard B. Jr.	Salisbury

North Dakota

Sorenson, Allen R.	Minot
Strom, Adrian D.	Landa
Wicklund, Maurice M.	Grenora

Ohio

Adams, Harley S. Jr.	E. Cleveland
Austin, Otis G.	Alliance
Banfield, Harlow F. Jr.	Wellsville
Bassett, Gardner G.	Cleveland
Baston, William P.	Cincinnati
Beall, John A.	Galion
Cajacob, Melville E.	Cincinnati
Chudde, Sam S.	Dayton
Cogswell, Robert C. Jr.	Hamilton
Crawley, Clarence R.	Mt. Healthy
Dehr, John W.	Cleveland
Dickerhoof, Gilbert R.	Bellaire
Franken, Robert	Columbus
Friedland, Fritz	Warren
Gatti, Frank G.	New Waterford
Gleitsman, Louis A.	Akron
Goler, George G.	Cleveland
Gove, Roger M.	Urbana
Hamm, Robert S.	Columbus
Hancock, Thomas J.	Marietta
Hattendorf, Otto W.	Cincinnati
Haugh, Donald C.	Wellsville
Hubay, Charles A.	Shaker Heights
Irvin, Emory R.	Bradford
Jackel, Merl M.	Cleveland Heights
Jentes, Paul K.	Wooster
Johnston, Charles E.	Columbus
Kahn, Marcel T.	Cleveland Heights

Ohio—Continued

Kent, Gerald T.	Cleveland
Kilpatrick, Elmer M.	Columbus
Kleinman, Leonard A.	Glouster
Kunnen, Albert A.	Cincinnati
Leeds, Horace M.	Winchester
Madow, Leo	Cleveland Heights
Millonig, Arthur F.	Dayton
Monger, William D.	Columbus
Norris, James W.	Columbus
O'Bell, John J.	Kingsville
Pagano, James J.	Canton
Peatee, Roger A.	Weston
Perlman, Robert	Cincinnati
Petersilge, Carl L.	Lakewood
Ransohoff, Joseph	Cincinnati
Rentschler, John H.	Conneaut
Rini, Anthony C.	Cleveland Heights
Ripsteen, Joel S.	Youngstown
Sawyer, Warren C.	Marion
Scanlon, Edward F.	Steubenville
Schaefer, William L. Jr.	Middletown
Scherer, John R.	Portsmouth
Schildt, Paul J.	*Springfield*
Schipfer, Francis H.	Cleveland Heights
Schroeder, Edmund F.	Cleveland Hgts.
Schwartz, Arthur M.	Cincinnati
Schwartz, Ferdinand F.	Painesville
Seaman, Arthur J.	Cincinnati
Seitz, Howard M.	Wapakoneta
Shepley, Felix R.	Massilon
Smith, Clarence V.	Cincinnati
Stewart, Dudley M.	Toledo
Stilwill, Maurice E.	Massillon
Stoll, Richard G.	Cleveland
Strong, James C. Jr.	Cincinnati
Tapper, Ralph W.	Dayton
Tillman, Norbert A.	Lorain
Ulmer, Arthur H. Jr.	Toledo
Utrecht, Arthur C. Jr.	Cincinnati
Volpe, Peter A.	Worthington
Wadsworth, Charles L.	Cincinnati
Waltz, Frederick A.	Columbus
Weissmann, Carl J.	Cincinnati
Westcott, Richard N.	Cincinnati
Whitaker, Jack L.	Cleveland
White, Harold W.	Cincinnati
Whitehouse, John D.	Cincinnati
Whittenberger, James L.	Ashtabula
Will, David R.	McArthur
Winter, Andrew A.	Toledo
Woolsey, Frank M. Jr.	Cleveland
Wright, Joseph F.	Cincinnati
Wright, Norman S.	Springfield
Xander, Gordon W.	Columbus
Zlotnick, Sam	Youngstown
Zodikoff, Rudolph M.	Mariemont

Oklahoma

Bassett, Clifford M.	Cushing
Cohenour, Howard M.	Tulsa
Conrad, Loyal L.	El Reno
Fluhr, William F.	Oklahoma City
Hilderbrand, Harold E.	Commerce
Macroy, Paul D.	Bethany
Martin, Wiley W.	Boley
Sandlin, Robert E.	Henryetta
Seid, Sidney E.	Chilocco
Sell, Lawrence S.	Oklahoma City
Trimble, David N.	Tulsa
Watson, Charles W.	Tulsa

Oregon

Ballard, Robert F.	Portland
Bretherton, Walter W.	Portland
Cherry, Howard L.	Portland
Davis, Thomas A.	Portland
Havlicek, Theodore L.	Portland
Nichols, Gregory B.	Portland
Rawls, Frederick F.	Corvallis
Rummell, Philip M.	Dillard
Westerberg, Harry	Portland
Whitely, James M.	Portland

Pennsylvania

Anderson, Robert L. Jr.	Pittsburgh
Ard, Robert S.	Pittsburgh
Arnheim, Falk K.	Pittsburgh
Baylor, Louis P.	Northumberland
Bertsch, Albert M. Jr.	Philadelphia
Beyer, William F. II	Punxsutawney
Black, Samuel R.	Turtle Creek
Bransford, Lee E. Jr.	Upper Darby
Brenner, Sidney	Philadelphia
Brown, Charles W.	Waynesburg
Brown, Patrick N.	Philadelphia
Bucci, Joseph F.	Derry
Butt, Frank H. Jr.	Pittsburgh
Callaghan, Philip J.	Williamsport
Cheraskin, Emanuel	Upper Darby
Clark, William K.	Brentwood
Cohen, Harry W.	Philadelphia
Darby, Walter S.	Philadelphia
Davidson, Jay H.	Philadelphia
Davis, Sidney H.	Milton
Deitrick, George A. Jr.	Sunbury
Dewees, Robert L.	Glen Mills
Digiacobbe, Hugo R.	Gallitzin
Dillman, Melvin A.	Roxborough
Douds, Howard N.	Beaver Falls
Durr, Theodore H. Jr.	Philadelphia
Faludi, Heniz K.	Philadelphia
Filipek, Walter J.	W. Hazleton
Finsterwald, James F.	Dormont
Frantz, Alfred S.	Glenside
Fulton, William O.	Harrisburg
Garfinkle, Benjamin M. Jr.	Harrisburg
Glick, Israel	McKees Rocks
Gosnell, Cleason E.	Millvale
Helm, John D. Jr.	New Providence
Hilferty, Daniel J. Jr.	Swarthmore
Hill, Frank B.	Waynesburg
Ivins, Joseph L.	Chester
Jack, Roy C.	Dunkard
Kirkpatrick, Daniel W.	Conshohocken
Korey, Joseph J.	Shenandoah
Lace, Richard E.	Vandergrift
Lawrence, Granville A. Jr.	Philadelphia
Learner, Norman	Philadelphia
Leighty, Ralph G.	Swissvale
Leiser, John Y.	Philadelphia
Levine, Macy I.	Johnstown
Lockwood, Raymond M.	Clarion
Luongo, Joseph C	Philadelphia
McCabe, Edward B.	Carbondale
McGahey, Frank E. Jr.	Pittsburgh
McIntyre, Donald K.	Drexel Hill
McKeating, Philip J.	Pittsburgh
McMullin, Joseph F.	Washington
Mallin, Aaron W.	Philadelphia
Manley, Russell M.	Canton
Mechling, Robert S.	Pittsburgh
Monsour, Robert G.	Jeannette
Montgomery, Mark R.	Fairchance
Morell, Clarence J.	Meadville
Morgan, Allan V.	Pittsburgh
Munchak, John Jr.	Scranton
Murphy, Arthur I. Jr.	Allison Park
Musulin, Rade R.	Pittsburgh
Nadal, Hector M.	Philadelphia
Netsky, Martin G.	Philadelphia
Nycum, John W.	Everett
Pilling, George P. IV	Philadelphia
Poucher, George E.	Rochester
Powell, Grover C. Jr.	Waynesburg
Preis, Francis J.	Philadelphia
Puszynski, Vincent J.	Philadelphia
Reed, Elmer M.	Beaver Falls
Reilly, William M. Jr.	West View
Renton, Gordon I.	Pittsburgh
Rinaldi, Lucian L.	White Haven
Ritter, Charles W.	Philadelphia
Robbins, William S.	Philadelphia
Rogers, Lewis L. III	Kingston
Roth, Russell B.	Erie
Rupp, Nevin H.	Reading
Sarshik, Milton	Philadelphia

PHYSICIANS SEPARATED FROM SERVICE

Pennsylvania—Continued

atinsky, Victor P.........Philadelphia
canlon, James P..............Llanerch
chafer, Donald W...........Cincinnati
Schmidt, Edward.............Ben Avon
Sedwick, Sidney G..........Kittanning
Seltzer, Harry.................Pittsburgh
Shackleton, John H. Jr.....West Chester
Shaffer, Frank W...........McKeesport
Shelby, Joseph E.............Uniontown
Sherman, Henry K...........Pittsburgh
Shober, John J...............Philadelphia
Sidow, Robert J............Connellsville
Siegel, Joseph F..... ....Washington
Singer, Milton.................Pittsburgh
Sivitz, Howard D...........Philadelphia
Skurkay, John B..............Monessen
Smith, Francis A.............Pittsburgh
Staples, Herman D..........Philadelphia
Sterrett, William N... .....Mifflintown
Stitt, Donald G......................Apollo
Stone, Brant H...............Philadelphia
Szmal, Chester J.............Glen Lyon
Taylor, Alfred M............Grove City
Teater, Joseph B.........Port Allegany
Toth, Alex G. Jr............Canonsburg
Umlauf, Charles W...............Ashland
Van Deusen, Courtland......Philadelphia
Vogel, Stoughton R..........Philadelphia
Wallace, James E................Oil City
Weightman, Joseph..............Reading
Weiss, Jacob J..................Nanticoke
Wendling, W. W......Chapman Station
Wentz, Clarkson............Wynnewood
White, Albert E.............Morrisville
Wilfong, Thomas L...........Pittsburgh
Wilkos, Francis J........................Erie
Wilson, Thomas R.........Ellwood City
Winter, William J. Jr.........Pittsburgh
Wright, George J. Jr.........Pittsburgh
Wrona, Eugene A.............Glen Lyon
Yoder, Morris L. Jr.........Glen Olden
Yost, Howard A...........Philadelphia
Zaidan, Fred............Mount Pleasant
Zimmerman, Albert.........Philadelphia

Rhode Island

Chimento, Dominic F...........Westerly
Dolan, William D. Jr ....Westerly
Gorman, John J................Pawtucket
Jeremiah, Bert S..............Pawtucket
Palumbo, Joseph A...........Providence
Round, Charles B............Providence
Saklad, Elihu..................Providence
Wittig, Joseph E..........West Warrick

South Carolina

Fairey, Philip W. Jr............Anderson
Guess, Joseph H................Denmark
Harter, James W.............Orangeburg
Kerrison, George L...........Charleston
McCaw, William H. Jr.........Columbia
Marshall, Alexander W.......Charleston
Prevost, Claude T...............Anderson
Ramsbottom, John G.......Spartanburg
Scher, Ernest.....................Columbia
Spann, Charles L.................Bamberg
St. Allworth, James M.....St. Matthews
Talbert, Thomas W.............Columbia
Wilson, John M................Darlington

South Dakota

Saylor, Howard L.....................Huron

Tennessee

Alexander, James E...........Memphis
Anderson, William E.........Dyersburg
Bryant, Frank L..................Oak Ridge
Hay, Sam H.......................Nashville
Hendrix, James H. Jr.........Newbern

Tennessee—Continued

James, G. W....................Humboldt
Ledbetter, John H. Jr.........Clarksville
Kirk, Clyde R...................Greenville
Postlewaite, Jack C...........Nashville
Range, James J..........Johnson City
Seargeant, Lee J. Jr...........Lake City
Siegel, Saul.......................Memphis
Smith, Alvin E...................Knoxville
Smith, Joseph R........................Paris
Smith, Stewart P......Lookout Mountain
Straight, George W...........Nashville
Tankesley, Robert M........Chattanooga
Trevathan, Robert D............Bruceton
Turley, Hubert K. Jr...........Memphis
Waggoner, Harry N.........Dyersburg
Watson, George N.................Dover
Webb, Roderick C..............Jackson
Wicker, Walter Jr..............Memphis

Texas

Badt, Morris B................Ft. Worth
Brindley, Clyde O.................Temple
Denson, Judson S..................Dallas
Gatoura, George J.................Austin
Hardgrove, Thomas J..............Waco
Lee, Henry M.....................El Paso
Leggett, Milbourne K..........Houston
Lowrey, Oliver W..........Ft. Worth
Pawelek, Vincent S..........Falls City
Petta, George H..............Fort Worth
Pope, James W..................Doucette
Richman, Irving M.................Dallas
Schuessler, Willard W...........Dallas
Shelton, James L....................Dallas
Smith, John M. Jr..........San Antonio
Strashun, Mat F..................Houston
Swearingen, Revace O............Austin
Vassallo, Alfred L..............Galveston
Whitten, John W....................Austin
Whittenburg, Ross E...........McAllen
Youens, Willis G. Jr..........Columbus

Utah

Curtis, Lindsay R.........Salt Lake City
Evans, Edward A.........Salt Lake City
Rupper, John H......................Provo
West, James S..........Salt Lake City

Vermont

Caccavo, Francis A..................Barre
Davis, Everett L.....Craftsbury Common
Dwinell, Stanley F...............Bradford
Gleason, Robert I.............Burlington
Haines, Carleton R..................Barre
Patch, Peter E...................Windsor
Rulfo, Henry J.........................Barre
Rush, Harold J....................Newport
Simpson, James E...........St. Albans
Whipple, Harry O............Montpelier

Virginia

Archer, John S. Jr.............Richmond
Cooley, Robert N.............University
Daughtrey, Walter F. Jr.........Holland
Dickie, James W................Roseland
Farley, William W.............Richmond
Grizzard, William S.........Drewryville
Hagan, Hugh J. Jr..............Roanoke
Handy, Abran E. Jr.................Stuart
Hupp, Cecil G...............Mt. Jackson
Lipman, Ansel...............Portsmouth
Melchior, George W...........Richmond
Nuckols, Cardwell C.........Portsmouth
Payne, Robert L. Jr..............Norfolk
Robertson, Elmer S............Richmond
Sacchet, Hugo A..........Clifton Forge
Salmon, Charles L. Jr.........Richmond
Smith, Arthur M. Jr......Charlottesville
Smith, Nelson M.............Winchester

Virginia—Continued

Smith, Thomas B.................Ashland
Sproles, John H.............Pocahontas
Strauss, Maurice B...........Alexandria
Thompson, James A. Jr..........Marion
Vaughan, Warren T. Jr........Richmond
Ward, Oscar W. Jr.............Phoebus
Williams, Mark B.......Hamden-Sydney
Wooding, Nathaniel H............Halifax

Washington

Boyd, Jack L.......................Seattle
Calhoun, Carl W..................Everett
Hogan, James D...................Renton
Marshall, Curtis....................Seattle
Maurice, Gordon L...............Yakima
Polley, Robert F. L..............Spokane
Whitesel, Glen M.................Spokane

West Virginia

Azar, Philip L.........New Martinsville
Coffield, Olan T............Morgantown
Lawson, Claude S. Jr..........Shinnston
Lilly, Milton J. Jr.......Frazier's Bottom
Mamula, Peter..........Hollidays Cove
Perkins, Haven M.................Rainelle
Perry, Thornton T. III.....Jefferson Co.
Riser, Harold B...................Wheeling
Stewart, John A..............Little Otter
Strader, Hutton B...................Malden
Swart, Howard A...........Charleston
Thrush, Lawrence B..........Moorefield

Wisconsin

Bill, Kenneth C....................Madison
Chudnoff, Jack S...........Milwaukee
Fox, Robert E.............Fond Du Lac
Grab, John A.......................Madison
Healy, William G................Madison
Henry, Robert B............Wauwatosa
Jamieson, John G..................Racine
Parkin, Robert C.................Lacrosse
Quandt, Raymond W.........Watertown
Reinert-Werner, Jans H...........Eland
Rowe, Richard J.............Dodgeville
Santer, Daniel G.............Milwaukee
Schaefer, Leroy W...........Milwaukee
Schlenker, George M.......Union Grove
Schroeder, Jack De Vea.......Janesville
Stemper, John A..............Milwaukee
Stenberg, Sherman T.............Hudson
Strewler, Gordon J..................Racine
Sweed, Aaron...................Milwaukee
Tatum, Howard J...................Madison
Triggs, Perry O.......Wisconsin Rapids
Usow, Eugene J..............Milwaukee
Veit, Henry.......................Milwaukee
Weller, Ross R.................Milwaukee
Wynn, Sidney K..............Milwaukee

Canal Zone

Selinkoff, Joshua J..................Gatun

Hawaii

Ing, Edmund T. K.............Honolulu
You, Richard W...............Honolulu

Puerto Rico

Rivera, Julio V.............Rio Piedras
Rullan, Antonio.....................Yauco

Canada

Banting, Kenneth C................Lucan
Modlin, Herbert C..............Montreal
Yoachim, Maurice.............Cardston

Bermuda

Scott, Arthur E.........Tuckers Town

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CONNECTICUT

Personal.—Dr. David R. Lyman, director of Gaylord Farms, Wallingford, was elected to honorary membership in the Connecticut Tuberculosis Association at its seventh annual meeting in New Haven, October 30, in recognition of the forty years he has devoted to his work in tuberculosis.——Dr. John D. Booth, Danbury, has been appointed to the Connecticut Medical Examining Board to fill the unexpired term of Dr. Daniel C. Patterson, recently deceased.

Course for Laymen in Mental Health.—The first in a series of orientation courses for laymen in the problems of mental health was held at the Connecticut State Hospital, Middletown, October 30. Sponsored by the joint committee of the state mental hospitals, the all day conference was attended by approximately twenty-five representatives of the press, clergymen and social workers. The program featured talks by officials of the hospital, motion pictures, panel discussions and study groups.

Rehabilitation Group Formed.—The Connecticut Rehabilitation Association was organized in Hartford, October 30, to promote the general cause of rehabilitation for mentally or physically disabled children and adults. Col. James M. Quinn, New Haven, chairman of the State Veterans Reemployment and Advisory Commission, was elected president of the organization; Randall Hamerick, Ph.D., Bridgeport, vice president, and Frederick W. Novis, acting director of the state board of education, secretary-treasurer. According to the constitution adopted at the meeting, the organization will "encourage and stimulate within Connecticut programs of guidance, physical restoration, training and placement in employment for all groups of disabled persons; promote and encourage the development of rehabilitation centers, and affiliate with the National Rehabilitation Association, Inc." About two hundred representatives of medicine, education, social welfare and industry attended the organization meeting.

DISTRICT OF COLUMBIA

Early Ambulation and Rapid Rehabilitation.—A symposium on "Early Ambulation and Rapid Rehabilitation of Hospitalized Patients" was conducted in Washington, November 13, with the following speakers: Dr. Howard A. Rusk, New York, guest speaker; Dr. Hugh H. Hussey Jr., medicine; Dr. James R. Veal, surgery, and Dr. William D. Terrell Jr., obstetrics. A joint meeting of the Medical Society of the District of Columbia and the Baltimore City Medical Society was addressed by Dr. John H. Mulholland, New York, on "Maintenance of Fluid Balances in Surgical Patients." This meeting marks the resumption of an old custom, abandoned during the war, of the Baltimore society meeting jointly with the Medical Society of the District of Columbia.

Graduate Work in Ophthalmology.—The George Washington University department of ophthalmology is planning the resumption of the intensive postgraduate courses in ophthalmology, the next course to be given the week of February 3-8 inclusive. These courses were discontinued during the war. The following guest lecturers are assisting the resident staff on the program:

Dr. Francis H. Adler, Philadelphia.
Dr. James Baird, Atlanta, Ga.
Dr. Sylvester Judd Beach, Portland, Maine.
Dr. Hermann M. Burian, Boston.
Dr. Ramon Castroviejo, New York.
Dr. Clyde A. Clapp, Baltimore.
Dr. Francis B. Fralick, Ann Arbor.
Deane B. Judd, Ph.D.
Dr. Peter C. Kronfeld, Chicago.
Dr. Walter I. Lillie, Philadelphia.
Dr. Angus L. MacLean, Baltimore.
Mr. Philip L. Salvatori, New York.
Dr. Harold G. Scheie, Philadelphia.
Dr. Edmund B. Spaeth, Philadelphia.
Dr. Frederick W. Stocker, Durham, N. C.

The tenth annual postgraduate course in ocular surgery, pathology and orthopedics will be given during the week of January 27-February 1. This is a practical course and is limited to thirty participants. For further details of the postgraduate courses in ophthalmology write to the secretary, Mary E. Kramer, Suite 34, 1801 K Street N.W., Washington 6.

IOWA

Personal.—Dr. Donald M. Harris has resigned as director of health district number 4, with headquarters in Sioux City, to accept a similar position of the Chippewa County Health Unit at Sault St. Marie, Mich. District number 4 includes the counties of Woodbury, Plymouth, Monona, Crawford and Ida.——Dr. Joseph A. Uran, Riceville, recently completed his fiftieth year in the practice of medicine.

KENTUCKY

Physician Honored.—Dr. John E. Kincheloe Day was observed in Hardinsburg recently to honor the physician who has practiced in the county for forty-seven years. One feature of the celebration was the starting of a drive for funds for a county hospital to serve as a memorial to the physician. Dr. Kincheloe was recently presented with the E. M. Howard Memorial Award of the Kentucky Medical Association (THE JOURNAL, November 9, p. 591).

MASSACHUSETTS

Experimental Study of Diabetes.—The entire population of the town of Oxford, 5,100 men, women and children, on October 7 became "guinea pigs" in a form of experiment to check the spread of diabetes, according to the New York *Sun.* It was stated that this was the first time that a whole community would be tested for diabetic symptoms. It was planned to obtain blood and urine specimens for laboratory examinations, the reports going to private physicians within two days for "quick treatment."

MISSISSIPPI

Societies Merge.—The North Mississippi and the Northeast Mississippi Medical Societies merged October 17, retaining the name North Mississippi Medical Society. Dr. Ashford A. H. Little, Oxford, was named president.

Loans to Medical Students.—Applications for loans to medical students to become effective in February 1947 will be received at the state medical education board offices in Jackson, beginning November 1. Scholarship loans are made available to worthy Mississippi men and women attending medical school by a program authorized by the 1946 legislature. Recipients of such loans sign a state contract to return to rural Mississippi for a period of two to five years following completion of medical education and one year internship. Interested persons should address inquiries to Mrs. Maria Voskamp, Executive Secretary, Mississippi State Medical Education Board, Room 37, 200 North Street Building, Jackson. New application forms have been prepared and are now ready for distribution. Students wishing to be considered for February scholarship grants are urged to get in touch with the state medical education board immediately.

NEBRASKA

Ninety Years of Age.—Dr. Martha E. Clark, who practiced medicine in Omaha twenty-eight years, celebrated her ninetieth birthday October 24. Dr. Clark graduated at Hahnemann Medical College and Hospital, Chicago, in 1897.

NEW MEXICO

State Medical Election.—Dr. Victor Adams, Raton, was named president-elect of the New Mexico Medical Society at its recent meeting, and Dr. Charles A. Miller, Las Cruces, was installed as president. Other officers include Dr. Donat F. Monaco, Gallup, vice president, and Dr. Harold L. January, Albuquerque, secretary-treasurer.

NEW YORK

Personal.—Dr. Robert E. A. Milne, Le Roy, has been appointed a member of the board of education of Rochester.——Dr. Charles B. Perkins, Franklinville, has been appointed coroner of Cattaraugus County to succeed the late Dr. Halley W. Hammond.——Dr. Harold J. Harris, Westport, gave the introductory speech and first lecture before the V. Reunion para el Estudio de la Brucelosis, October 28-November 2. The title of the lecture was "The Opsonocytophagic Test in Brucellosis; Some Observations on Its Technical Factors, Uses and Limitations."

New York City

Lectures on the Cardiovascular System.—Dr. Eric Ogden, visiting professor, New York University College of Medicine, and professor of physiology, University of Texas Medical Branch, Galveston, opened a series of three lectures November 6 on the cardiovascular system. The first lecture was on Experimental Hypertension and Its Extrarenal Sequel , the second, November 13 on 'The Function of the Cardiovascular System and Its Regulation," and the third, November 20, on 'Cardiovascular Integration by Endocrine and Nervous Mechanisms"

Recent Advances in Therapy—The Mount Sinai Hospital of New York will begin a series of lectures on recent advances in therapy, December 4, with a talk by Dr John G Gibson II, Boston, on "Advances in Blood Transfusion Therapy" Others in the series will be

Dr William Dock Brooklyn December 18 Physiologic Problems in the Treatment of Heart Disease
Dr Arthur J Patek Jr, January 8, The Dietary Treatment of Cirrhosis of the Liver
George R Cowgill PhD New Haven January 22 Recent Advances in Our Knowledge of Vitamins
Dr Hiram Merritt February 19 The Treatment of Epilepsy
Dr Sidney C Madden Atlanta Ga March 5 Amino Acid Therapy
Dr Alvan L Barach March 19, Physiological Therapy in Diseases of Respiration
Dr Lester R Dragstedt Chicago April 2 Section of the Vagus Nerves to the Stomach in the Treatment of Peptic Ulcer
Dr Edwin B Astwood Boston April 16 The Medical Treatment of Hyperthyroidism

Cancer Hospital Planned by City.—Plans were filed November 1 for a new 300 bed, twelve story city hospital for the treatment of chronic cancer patients The hospital will be built on the east side of First Avenue between Sixty-Seventh and Sixty Eighth streets The cost, according to the plans filed with the Department of Housing and Building will be $2 900 000 the New York *Times* stated November 2 Land for the new hospital was donated to the city by the Memorial Hospital, Dr Edward M Bernecker commissioner of hospitals, explained With Memorial Hospital and the new Sloan-Kettering Institute for Cancer Research now under construction the city's hospital will be one unit of a center devoted to the study and treatment of cancer When the building is completed some time in 1948, Memorial Hospital will nominate the staff and will also make available to the city institution its treatment facilities Thus the city will be spared the cost of duplicating expensive x-ray treatment equipment According to the plans the city hospital will contain laboratories, operating rooms, offices, classrooms, wards and living quarters for the hospital staff The offices and laboratories will be on the first floor classrooms on the mezzanine, and wards and utility rooms on the next seven floors Living quarters will be on the tenth floor a dining room on the eleventh floor and an apartment on the twelfth floor A penthouse also is included in the plans

OHIO

Student Prize—Through the cooperation of Mead Johnson and Company and the Museum of the Cleveland Medical Library, a prize of $100 is offered to the student in the school of medicine of Western Reserve University submitting the best thesis on a subject relating to the history of medicine It is suggested that exhibits in the museum might furnish leads for such an essay The award will not be made unless the quality of the articles submitted warrants such action Contributions should be typewritten in double space on good white paper and on one side of the sheet only The thesis must be long enough to provide a convincing argument and short enough to maintain interest All manuscripts shall become the property of the Cleveland Medical Library They must be mailed to the director of the Howard Dittrick Museum of Historical Medicine, 11000 Euclid Avenue, not later than March 1

PENNSYLVANIA

Philadelphia

Julius Comroe Promoted.—Dr Julius H Comroe Jr, formerly assistant professor of pharmacology, University of Pennsylvania School of Medicine, has been appointed professor of physiology and pharmacology in the university s graduate school of medicine

Clinic Named for Physician—The new 18 bed clinic for the hospitalization of alcoholic addicts at St Luke s Hospital has been named the Charles Dudley Saul Clinic in honor of the medical director of the hospital Credit goes to Dr Saul for development of the clinic In the first four months of its operation the clinic has cared for 238 patients

Hospital News—Tumor Day was observed at the Jewish Hospital November 19 with combined pathologic, radiologic and oncologic conferences presided over by Dr Fred W Stewart, Memorial Hospital New York Another session will be addressed by Dr Charles F Geschickter, Baltimore, on 'Recent Advances in the Etiology and Treatment of Cancer '

SOUTH CAROLINA

Allergy Meeting.—The second annual meeting of the Southeastern Allergy Association will be held January 18-19 at the Atlanta-Biltmore Hotel, Atlanta, Ga. Hotel reservations should be made directly with the hotel Dr. Hal M Davison, Atlanta, is president of the Southeastern Allergy Association, Dr. J Warrick Thomas, Richmond, Va, vice president, and Dr Emma B MacInnis, Columbia, S C, secretary-treasurer.

First State Health Officer.—South Carolina is said to be the first state to have had a state health officer, according to the book on Government in Public Health by Dr Harry S Mustard, New York The health officer was appointed by a special act of the general assembly of South Carolina The act of 1712 was repealed in 1721. In 1908 the general assembly passed another act creating the office The first state health officer appointed under the 1908 act was Dr Charles F. Williams, Columbia In 1911 he resigned and was succeeded by Dr. James A Hayne, Columbia, who served continuously for thirty-three years before resigning in 1944, when he was succeeded by Dr Benjamin F Wyman, Columbia

TENNESSEE

Changes in Health Officers—Dr John M Weir Jr, New York, has been named health officer of the Obion-Lake County Health Unit, filling the vacancy that occurred when Dr. William L Phillips resigned last October to enter private practice at Newbern——Dr Price H Duff, formerly of Crassville, has been appointed health officer of Rutherford County, Murfreesboro, succeeding Dr James B Black, who resigned, effective July 1, to enter the private practice of medicine——Dr Walter C Humbert, Erwin, has been appointed director of Giles and Lincoln counties——Dr George K Henshall Jr, Chattanooga, has been named director of the division of maternal and child health, Chattanooga-Hamilton County Health Department, to succeed Dr Rutherford O Ingham

TEXAS

Special Lectures—At the seventeenth annual meeting of the Texas Association of Obstetricians and Gynecologists in Galveston November 2 the Calvin R Hannah Lecture was delivered by Dr William F Mengert, Iowa City, on "Pelvic Cellulitis and the J J Y Paine Lecture by Dr John Rock, Boston on 'Menstrual Disorders" At a special postgraduate conference in cooperation with the maternal and child health division of the Texas State Board of Health and the department of pediatrics of the University of Texas Medical Branch, Galveston, during the week of October 28 Dr Daniel C Darrow, New Haven, gave the William Buchanan Lecture on 'The Treatment of Infant Diarrhea"

Dallas Health Museum—On September 17 at luncheon in the Baker Hotel the Dallas Health Museum was formally organized The project is one of the first adopted by the newly organized Dallas Academy of Medicine The Dallas Park Board has designated a building in Fair Park for the use of the Dallas Health Museum which will be considered a permanent Dallas institution It opened officially October 5 during the state fair of Texas with Dr Bruno Gebhard, director of the Cleveland Health Museum, as the principal speaker Mr R L Thomas has been named the first president of the Dallas Health Museum, Mr Charles R Moore and Mrs Margurite Hays as vice president Mr W Ray Spears as treasurer and Dr Milford O Rouse Dallas, as secretary

VIRGINIA

Portrait of Physician—An oil portrait of the late Dr William O Smith was recently presented to the Piedmont General Hospital, Altavista Dr Smith practiced in Pittsylvania County and Altavista for more than forty years, he died in 1940

Memorial to Dr. McCluer.—The McCluer Clinic is to be established in Alexandria under the auspices of the Virginia Cancer Foundation with Dr Herbert D Wolff Jr Alexandria, as director, newspapers reported October 9 The clinic will be a center for the diagnosis and treatment of cancer and will be a memorial to the late Dr John C McCluer, Parkersburg, who died in 1945 The memorial is being set up to honor Dr. McCluer who during his twelve years as director in Alexandria was a leader in the improvement of community health facilities

First Chief Medical Examiner.—Dr Herbert S Breyfogle, St Louis, has been appointed the first chief medical examiner in Virginia Dr Breyfogle will have direct supervision of the administration of an act of the 1946 general assembly which established an entirely new system of coroners' examinations and reports. Under the act the report is required from each local coroner on the circumstances of every death occurring in his county or city under unnatural or suspicious circumstances. Dr. Breyfogle graduated at the University of Chicago School of Medicine in 1937 and until his new appointment was director of the medicolegal department of St. Louis County, where he was also acting coroner.

Personal.—Drs. George H. Carr Jr., Portsmouth, and Guy W. Horsley, Richmond, are members of the state board of medical examiners for the second and third districts, respectively, succeeding Dr. Philip S. Moncure, Norfolk, and Dr. Hack U. Stephenson, Richmond, whose terms expired July 1. Dr. Moncure has served on the board continuously since June 1918 and Dr. Stephenson since December of the same year. The board adopted a resolution in appreciation of the work done by these two physicians.——Dr. James L. Hamner, Mannboro, has been appointed a member of the state board of health, effective July 1, succeeding Dr. John B. Jones, Petersburg, resigned.——Dr. Thomas B. Pope, Kingston, has been appointed coroner of the city of Petersburg to succeed Dr. Henry M. Snead, who recently resigned.

WISCONSIN

Fall Program Opens for Medical Society.—The first of the 1946-1947 series of meetings of the University of Wisconsin Medical School was held October 15 in Madison with a presentation by Dr. Harold P. Rusch, Madison, on "Research Projects at the McArdle Memorial Laboratory" and James A. Miller, Ph.D., Ann Arbor, and Elizabeth C. Miller, Ph.D., on "The Present Status of Research on the Hepatic Carcinogen p-Dimethylaminoazobenzene." All the speakers are members of the staff of the McArdle Memorial Laboratory at the university.

New Cancer Division.—The Wisconsin State Board of Health in August authorized the establishment of a new cancer division to intensify the crusade against cancer. A specially qualified physician will be sought as supervisor. The new department will cooperate with existing anti-cancer groups in the state, including the Field Army and the operating committee of the State Medical Society of Wisconsin. According to the Wisconsin State Board of Health Bulletin, cancer has claimed 92,062 lives in Wisconsin during the past twenty-six years, an average of more than 3,500 yearly. The disease has been the second leading cause of death since 1920.

Physicians Honored.—A public program was held in the Oconomowoc State Park, September 29, to honor Dr. Michael R. Wilkinson on the occasion of his eighty-second birthday. Dr. Wilkinson has been practicing in the city fifty-three years. He has held various offices in the Waukesha County Medical Society and is currently president of the Waukesha County Historical Society and athletic director of Oconomowoc High School. He has four sons who are physicians.——Dr. John M. Dodd, Sr., who has practiced in Ashland for fifty-six years, was entertained by the Odd Fellows, October 5, to celebrate his eightieth birthday.——Dr. W. H. Vosburgh, Denmark, was guest of honor recently at a public gathering honoring his fifty years' service to the community.

HAWAII

Personal.—Dr. Marcus Guensberg, formerly of New York, has been appointed medical director of the Territorial Hospital, Kaneohe, to succeed Dr. Ellis A. Stephens, who resigned to enter private practice.——Dr. and Mrs. (Dr. Tai Heong Kong) K. R. Li, Honolulu, celebrated their golden anniversary with an open house on July 14. This date also was the cause for celebration of fifty years of medical practice in Hawaii for each of the couple as well as their seventy-first birthdays.——Dr. Theresa Woo, formerly a captain in the medical corps of the army, was recently appointed pediatrician with the bureau of maternal and child health of the board of health. She succeeds Dr. Martha W. Groves, née Martha C. Wager, who resigned in June.

PUERTO RICO

Hospital Construction.—At a recent meeting held at the governor's palace in San Juan of representatives of the Insular Department of Health, the U. S. Public Health Service and the Planning Board, a general discussion of the hospital construction program for the next five years resulted in the creation of a committee to coordinate the work to be carried out in order that Puerto Rico might receive the benefits of the hospital construction program with federal aid. It is estimated that Puerto Rico will receive no less than $12,000,000 of federal aid for the construction of hospitals during the next five years. Governor Piñero has designated an advisory committee to prepare and execute the proposed program. Puerto Rico will contribute an amount of funds equal to that designated by the act of Congress. As a result of the large population of this island and the tremendous need for the construction of hospital facilities, as well as the reconstruction of existing facilities, the overall allocation of funds will be more than $25,000,000 for the next five years for both insular and federal funds. The Planning Board of Puerto Rico has adopted a master plan for the construction of district hospitals and also a preliminary master plan for municipal hospitals that will serve as a guide in the preparation of the whole program for the island.

GENERAL

Examinations in Otolaryngology.—The American Board of Otolaryngology will conduct examinations in 1947 at the Coronado Hotel, St. Louis, April 16-19, and Palmer House, Chicago, October 7-11.

Marriage and Family Health Education.—Janet F. Nelson, Ph.D., has been appointed director of marriage and family life education of the Planned Parenthood Federation of America. The service is new and will reach 350 local groups affiliated with the federation to develop services considered essential to the strengthening of the American family. Dr. Nelson has been serving as consultant on personal and family relationships from the U. S. O. division of the Y. W. C. A.

Urology Award. — The American Urological Association offers an annual award not to exceed $500 for an essay (or essays) on the result of some clinical or laboratory research in urology. Competition will be limited to urologists who have been in such specific practice for not more than five years and to residents in urology in recognized hospitals. For full particulars write the Secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tenn. Essays must be in his hands before May 1, 1947. The selected essay (or essays) will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Hotel Statler, Buffalo, June 30-July 3, 1947.

Mayo Foundation Receives Pharmaceutical Award.—The Mayo Foundation for Medical Education and Research will be presented with the award of the American Pharmaceutical Manufacturers' Association at its meeting in New York, December 9. The award of distinction goes to the foundation in recognition of its great contributions to public health, by fundamental research in the field of medical sciences, for the profound and lasting benefit of mankind. Isaiah Bowman, LL.D., president, Johns Hopkins University, Baltimore, will make the presentation address and Dr. Donald C. Balfour, director, Mayo Foundation for Medical Education and Research, Minneapolis, the speech of acceptance. Speakers during the ceremony will be:

Dr. Louis Schwartz, Washington, D. C., Progress in Fungus Disease Therapy.
Dr. Andrew Yeomans, Baltimore, Progress in Rickettsial Disease Therapy.
Dr. Samuel M. Feinberg, Chicago, Progress in Allergy Therapy.
Dr. Edward H. Rynearson, Minneapolis, Progress in Hormone Therapy.
Dr. Chester S. Keefer, Boston, Progress in Antibiotic Therapy.

Changes in Status of Licensure.—The California State Board of Registration in Medicine announces the following:

Dr. Isaiah J. Waterman, Seal Beach, Calif., license restored August 6.
Dr. Lee E. Smith, Oakland, Calif., license restored August 5.
Dr. John Jerome Tobinski, Los Angeles, license restored August 5.
Dr. Eugene Curry Nelson, Los Angeles, license restored August 5.
Dr. Gottfried Karl Friedrich Schnarrenberger, Los Angeles, license suspended for six months, effective August 17.
Dr. William Everts Downing, Clovis, Calif., license suspended for one year, effective August 17.
Dr. James Arthur Moran, Carmel, Calif., license suspended for one year, effective August 17.
Dr. William T. Engleman, San Bernardino, Calif., license revoked August 6.

The New York State Board of Medical Examiners announces the following:

Dr. Maynard Smith Owen, New York, license suspended for one year, effective July 1.
Dr. Edward Parrish, New York, license suspended for six months, effective July 26.
Dr. Meyer Louis Alpert, New York, license revoked July 31.

Meeting of College of Surgeons.—The clinical congress of the American College of Surgeons will be held in Cleveland, December 16-20, under the presidency of Dr. William Edward Gallie, Toronto. Headquarters will be in the Cleveland Public Auditorium and the Statler and Cleveland hotels, with most of the sessions, except the clinics at the hospitals, being held in the auditorium. The first Martin Memorial Lecture will be a feature of the presidential meeting Monday evening with Dr. Edward D. Churchill, Boston, as the speaker on "The American Surgeon, Army of the United States." The lecture supplants the annual oration in surgery and is a memorial to both Dr Franklin H Martin and Mrs Martin. The founder of the college and of *Surgery Gynecology and Obstetrics* was joined by his wife in making the college the beneficiary at their deaths of the journal, together with its physical plant operated by the Surgical Publishing Company of Chicago of which they were the owners. Dr Martin died in 1935 and Mrs Martin in 1945. The program will include numerous scientific papers on various subjects symposiums on care of the patient before and after operation venous thrombosis and prevention of pulmonary embolism antibiotic and chemotherapeutic agents in surgery, orbital reconstruction including prosthesis the treatment of deafness, surgery of the nasal accessory sinuses, plastic surgery of the head and neck cancer, fractures and other traumas and advances from war experiences. There will also be a forum on fundamental surgical problems and various panel discussions. Dr Edwin W Ryerson Chicago, will deliver the Fracture Oration on "Modern Methods in the Treatment of Fractures" Wednesday evening.

Radiology Meeting—The thirty-second meeting of the Radiological Society of North America will be held at the Palmer House, Chicago, December 2 6, under the presidency of Dr Lowell S Goin Los Angeles who will speak on "Radiology and the Future" Other speakers will include

Dr Stanley S Nemec, St Louis *Differential Diagnosis of Retrocardiac Shadows*

Dr John D Camp Rochester Minn Calcification of the Cerebral Basal Ganglions and Its Roentgenologic Significance

E Dale Trout and Z J Atlee Chicago Filter Value Inherent in Very High Voltage Radiation Therapy Equipment

Anna Goldfeder D Sc New York Further Studies on the Relation Between Radiation Effects Cell Viability and Induced Resistance to Malignant Growth IV *Effects of Roentgen Rays on Mammary Tumors Autogenous to Inbred Strains of Mice (dbaB and C3H)*

Dr Sydney F Thomas Palo Alto Calif Appendiceal Coproliths

Dr Abraham E Rakoff Philadelphia, The Endocrine Factors in Pelvic Tumors with a *Discussion of the Papanicolaou Smear Method for Diagnosis*

There will be symposiums on carcinoma of the uterine fundus and cervix treatment and care of advanced cancer patients, diseases of the chest and x-ray diagnosis and therapy of bursitis and arthritis. The Carman Lecture will be delivered by Dr Robert N Newell professor of radiology Stanford University, San Francisco, on "Quality of Radiation in Therapy."

Narcotic Violations.—The Bureau of Narcotics of the U S *Treasury Department announces the following*

Dr Herbert A Wilson, McAlester, Okla, entered a plea of nolo contendere in the U S District Court at Ada to a violation of the Harrison Narcotic Law, on October 10 he received a suspended sentence of three years in the penitentiary and was placed on probation for a similar period, he was also fined $500.

Dr Glenn P Treadwell, Friendship, Wis pleaded nolo contendere in the U S District Court at Wausau to the Harrison Narcotic Law and also to the unlawful sending of poison through the mail. On May 15 he was sentenced to pay a fine of $750.

Dr Donald A Cowan, Sault Ste Marie, Mich pleaded guilty in the U S District Court at Detroit to violations of the Harrison Narcotic Law on April 24 he received a suspended sentence of two years in the penitentiary and was placed on probation for a period of four years.

Dr Robert G McMurray Marion Ohio pleaded guilty to the violation of the Federal Narcotic Law September 11, and was sentenced to a term of three years in the U S Public Health Service Hospital Lexington Ky.

Dr Thomas S Carter Miami Fla pleaded guilty in the U S District Court at Tampa to violation of the federal narcotic law and on September 6 was sentenced to a term of two and one half years.

Dr Claude L Shoemaker, Chicago pleaded nolo contendere in the U S District Court in Chicago to violation of the federal narcotic law and on September 25 was sentenced to a term of five years which was suspended and he was placed on probation for a period of five years.

Dr Charles F Johnson Kenton Ohio pleaded guilty in the U S District Court at Toledo Ohio to violation of the federal narcotic law and on September 18 was fined $1 000 and was placed on probation for a period of five years.

Dr Ernest M McKenzie Hollywood Road Hot Springs, Ark pleaded guilty in the U S District Court in Arkansas to a narcotic violation and on September [illegible] sentence was suspended and he was placed on probation for a period of two years.

Dr Augustus D Harper Crossville Ill pleaded guilty in the U S District Court at East St Louis Ill to violation of the federal narcotic law and on September [illegible] was fined $200 and placed on probation for a period of two years.

Research in Heart Diseases.—Eleven additional fellowships and three more grants in aid to medical institutions for research in diseases of the heart and of the arteries were announced September 25 by the Life Insurance Medical Research Fund, New York. The additional awards bring this year's allocation of research funds to nearly $700,000. Organized a year ago, the Life Insurance Medical Research Fund is supported by 149 legal reserve life insurance companies in the United States and Canada (The Journal, May 4, p 52). All research sponsored by the fund is devoted at present to the cardiovascular diseases. Applications for research fellowships for 1947 will close on Jan 1, 1947 and for grants-in aid on Jan 31, 1947. Fellowships range from $1 500 to $2 000 a year for junior fellows and from $2 500 to $3 500 for seniors. New recipients are *Harwell G Davis II, LL D*, Medical College of Alabama, Birmingham; Dr Charles V E Dowling, New York, at Western Reserve University, Cleveland; Dr Jerome Gross, New York, at Massachusetts Institute of Technology, Dr Harper K Hellems, Lewisburg, W Va, Peter Bent Brigham Hospital, Dr Jack L Lewis, Los Angeles, Stanford University; Dr Harold Mankin, Columbia University College of Physicians and Surgeons, Dr George E Murphy, Kansas City, Mo, Rockefeller Institute for Medical Research, and Dr Hugh Grant Skinner, New Toronto, Ont, Canada, University of Toronto. Three junior fellowships to students who have not yet completed their work for degrees in medicine or the medical sciences include Thomas C Hall, Boston, to work at Harvard Medical School, Boston, Miss Marie Louise Nieft, Chicago, to work at the University of Southern California School of Medicine, Los Angeles, and Murray Saffran, Montreal, Quebec, to work at McGill University. Grants-in-aid were awarded to the Carnegie Institution of Washington, D C, for support of research into the embryology of the veins of the brain under the supervision of Dr George W Corner, to McGill University for support of research toward the development of procedures for heart surgery under the supervision of Dr David W MacKenzie, and to New York University for support of research toward designing an extremely delicate sensitive apparatus for measuring the blood pressure in the heart under the supervision of Dr Homer W Smith. The fellowship awards bring the total number given by the fund in the first year of its operation to twenty, representing $55,800. The twenty fellows come from eleven states and two Canadian provinces and will engage in medical research at seventeen different institutions. Total funds expended for grants-in-aid amount to $633,591, for a total of fifty-five research projects.

PHILIPPINE ISLANDS

Medical Meetings Resumed—*In an editorial comment the Journal* of the Philippine Medical Association discusses the thirty-ninth meeting of the association, held May 7-11. *The thirty-eighth annual meeting was held in April 1941.* The editorial said that to ward off the obnoxious influences of the enemy and the possibility that the medical profession in this *country might be used toward ends inimical to the interests* of its inhabitants, the Philippine Medical Association suspended all its activities for the duration. One feature of the recent *meeting was the awarding posthumously for the first time in* the history of the association of a gold medal and a citation to Dr Candido M Africa, an innocent victim of the Japanese *atrocities, for his contributions to medical science.* The house of delegates formulated a program for the rehabilitation of the association and its component societies in order that they may *resume all their former activities, it adopted a resolution thank*ing the American Medical Association for its readiness to help in the rehabilitation of the Philippine Medical Association *and in the rebuilding of the medical library destroyed during* the war it approved the Principles of Medical Ethics of the Medical Profession in the Philippines and authorized the coun*cil to seek the approval of the secretary of health and public* welfare that these may be adopted officially by the board of medical examiners, and it expressed readiness in taking its *share of the burden of rehabilitating the devastated country.* Dr Januario Estrada was elected president. He was president of the Manila Medical Society and the Colegio Medico Farmaceutico de Filipinas *from 1941 until 1945.* He has been twice vice president of the Philippine Medical Association. Other officers include Drs Juan Z Santa Cruz and Gonzalo Santos, vice presidents, and Dr *Antonio S Fernando, secretary-*treasurer.

Marriages

Joseph S Thomas Jr Flushing N Y, to Miss Olive St Marie at Keene, N H September 12.

James Oscar Hall Jr, Erwin, Tenn, to Miss Emily Ruth Borden of Greeneville September 15.

Charles Thornton Cowart, Donalsonville, Ga, to Miss P *Eileen Holton of Atlanta recently*

L Ireland Magruder, Portsmouth, Va, to Miss Hattie Cridlin Taylor of Urbanna, July 29.

Thomas Marion Davis, Columbia, S C, to Miss Adelle Davis in Savannah Ga, August 31.

Roy L Robertson, Shreveport, La, to Miss Gloria Anne Nobles of Gibsland, June 1.

Edwin H Whitmarth to Miss Cecelia Dougherty, both of New Castle, Pa, July 3.

Deaths

Norval Harvey Pierce ⊕ Del Mar, Calif.; College of Physicians and Surgeons of Chicago, 1885; born in Washington, D. C., May 13, 1863; professor of laryngology, rhinology and otology emeritus at his alma mater, now known as the University of Illinois College of Medicine, where in 1915 he was appointed professor and head of the department; formerly professor of otology at the Chicago Polyclinic and the Chicago Post-Graduate School; specialist certified by the American Board of Otolaryngology; member of the Illinois State Medical Society, National Institute of Social Sciences, Chicago Historical Society and the Chicago Society of Medical History; chairman of the research committee on otosclerosis, Chicago Medico-Legal Society; fellow of the American College of Surgeons, Chicago Academy of Medicine and the Institute of Medicine of Chicago; member and past president of the American Laryngological Society, American Laryngological, Rhinological and Otological Society, American Otological Society and the Chicago Laryngological and Otological Society; surgeon in the U. S. Navy during the Spanish-American War; a major in the medical corps of the U. S. Army during World War I, serving at Camp Grant and as chief otolaryngology surgeon at the U. S. Army base hospital in Vichy, France; decorated with military honors for his work in plastic surgery; served on the staffs of the Illinois Eye and Ear Infirmary and St. Luke's Hospital in Chicago; died October 28, aged 83.

Henry Ewing Hale, Princeton, N. J.; Columbia University College of Physicians and Surgeons, New York, 1896; at one time on the faculty of his alma mater; formerly affiliated with the Vanderbilt Clinic and the Babies Hospital and attending physician at Bellevue Hospital in New York City, where for many years he served on the board of education; founder and an officer of the Princeton Historical Society; served on the Princeton township board of education; chairman of the New York Medical Advisory board in connection with Selective Service during World War I; died November 5, aged 77, of injuries received in an automobile accident.

Wilfred Anthony Rose, San Francisco; Tufts College Medical School, Boston, 1930; member of the American Medical Association and the Massachusetts Medical Society; interned at St. Luke's Hospital in Jacksonville, Fla., and the Wheeling Hospital in Wheeling, W. Va.; began active duty as a lieutenant commander in the medical corps of the U. S. Naval Reserve on Oct. 12, 1942; for fifteen months medical officer with a naval repair unit in the Pacific; released from active duty on Jan. 1, 1946; died September 24, aged 41, of coronary thrombosis.

Eva Colt Bagley, Sioux City, Iowa; Michigan College of Medicine and Surgery, Detroit, 1895; died September 25, aged 81, of carcinoma of the bladder.

Marshall Henry Bailey, Norwell, Mass.; College of Physicians and Surgeons, Baltimore, 1893; member of the American Medical Association; at one time medical adviser to the students of Harvard University in Cambridge; died September 18, aged 87.

Franklin Wetmore Blye, Chicago; University of Illinois College of Medicine, Chicago, 1926; member of the American Medical Association; served during World War I; died September 28, aged 48, of coronary thrombosis.

Henry Weston Brody, New York; Long Island College Hospital, Brooklyn, 1905; member of the American Medical Association; chief of the medical staff of the Greater New York Taxpayers Mutual Insurance Association; formerly on the staffs of the Gouverneur and Good Samaritan hospitals; died September 20, aged 66.

William Burke, Greenwich, Conn.; Long Island College Hospital, Brooklyn, 1896; on the staff of the Greenwich Hospital, where he died October 1, aged 76, of chronic nephritis.

Toussaint C. Cabana, Attleboro, Mass.; School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal, 1894; died August 15, aged 77, of mitral insufficiency.

Thomas William Cail, Newton, Mass.; College of Physicians and Surgeons, Boston, 1910; died July 29, aged 60, of carcinoma of the stomach.

Edwin Morey Chase, King City, Calif.; University of Southern California School of Medicine, Los Angeles, 1934; interned at Santa Fe Coast Lines Hospital in Los Angeles; served a residency at the Kern General Hospital in Bakersfield and on the staff of the Ventura County Hospital in Ventura; died in the Santa Clara County Hospital in San Jose, September 16, aged 43.

Eric Knox Collier ⊕ Tipton, Okla.; Tulane University of Louisiana School of Medicine, New Orleans, 1926; died in Norman August 9, aged 43.

Edward Martin Crane, Hardwick, Vt.; University of Vermont College of Medicine, Burlington, 1895; served during World War I; on the staff of the Hardwick Hospital; for many years chairman of the local school board; died in the Mary Fletcher Hospital, Burlington, September 4, aged 78.

Charles Herbert Dockstader ⊕ Massapequa, N. Y.; Bellevue Hospital Medical College, New York, 1891; an Affiliate Fellow of the American Medical Association; died August 19, aged 80, of chronic endocarditis.

Robert Rockwell Felter, Pearl River, N. Y.; University of the City of New York Medical Department, New York, 1894; member of the American Medical Association; served as president of the First National Bank and the board of education in Pearl River; died October 3, aged 89.

John Joseph Gossner, Fabius, N. Y.; Syracuse University College of Medicine, 1916; member of the American Medical Association; served as health officer for the past twenty-four years in charge of the consolidated health district of Fabius; school physician; member of the staff of the Crouse-Irving Hospital in Syracuse, where he died August 26, aged 55, of acute appendicitis with perforation.

James W. Grubbs, Bowling Green, Ky.; Kentucky School of Medicine, Louisville, 1893; died September 18, aged 83.

Isaac W. Hooper, Norman, Okla.; Baylor University College of Medicine, Dallas, 1904; died in the Municipal Hospital August 25, aged 79.

Walter William Hotchkiss, Jamestown, N. Y.; University of Pennsylvania Department of Medicine, Philadelphia, 1888; died August 17, aged 80, of carcinoma of the liver.

Frederic Clarke Jewett, Baltimore; Baltimore University School of Medicine, 1893; at one time professor of diseases of the nose and throat at his alma mater; died June 15, aged 78.

Howard Kahn, Baltimore; University of Maryland School of Medicine, Baltimore, 1900; at one time on the faculty of his alma mater; member of the American Medical Association; died in the Maryland General Hospital September 24, aged 68.

Edward John Kirwan, Ludington, Mich.; Rush Medical College, Chicago, 1897; on the staff of the Paulina Stearns Hospital; died September 19, aged 76, of cerebral hemorrhage.

Assadour Hagop Kludjian, Lowell, Mass.; Baltimore Medical College, 1894; died August 5, aged 77, of arteriosclerosis.

John Anthony Kropacek, Chicago; the Hahnemann Medical College and Hospital, Chicago, 1912; member of the American Medical Association; formerly a member of the board of health in Cicero; died in the West Suburban Hospital, Oak Park, September 29, aged 58, of bronchopneumonia.

John Conrad Kunz, Cincinnati; Cincinnati College of Medicine and Surgery, 1891; member of the American Medical Association; on the staff of the Bethesda Hospital; died in the Christ Hospital September 18, aged 81, of aplastic anemia.

Margaret Rebekah Large, Lansdowne, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1909; died September 11, aged 70, of cerebral hemorrhage.

Michael Joseph Lawlor ⊕ Waterbury, Conn.; Columbia University College of Physicians and Surgeons, New York, 1906; for many years on the staff of St. Mary's Hospital; consulting surgeon at Hungerford Hospital in Torrington; died in a hospital at New London, N. H., September 16, aged 64, of ruptured abdominal aorta.

J. Joseph Link, St. Louis; Chicago Medical College, 1890; at one time on the staff of the City Hospital; died in St. Anthony Hospital July 31, aged 83, of carcinoma of the prostate.

Samuel Thomas B. McCabe ⊕ Johnsonburg, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1917; member of the staff of the Andrew Kaul Memorial Hospital, St. Marys; died in the Robert Packer Hospital, Sayre, September 10, aged 55, of dissecting aneurysm of the aorta.

John Denis McGowan, Sama Monica, Calif.; Harvard Medical School, Boston, 1885; fellow of the American College of Surgeons; at one time practiced in Chicago, where he was chief surgeon for the Commonwealth Edison Company; died September 10, aged 93.

Claude Worth McKee ⊕ Greensburg, Pa.; Rush Medical College, Chicago, 1897; served during World War I; member of the American Academy of Ophthalmology and Otolaryngology; for many years chairman of the advisory board of the Salvation Army; on the staff of the Westmoreland Hospital; died September 11, aged 70, of arteriosclerotic heart disease.

Bert Edward Mankopf ⊕ Washington, Mo.; Marion-Sims College of Medicine, St. Louis, 1897; served during World War I; captain, medical reserve corps, U. S. Army, not on active duty; died August 25, aged 72, of heart disease.

Oliver William Means Jr., Hartford, Conn.; Columbia University College of Physicians and Surgeons, New York, 1946; intern at the Hartford Hospital; died September 10, aged 31, of anterior poliomyelitis of the bulbar type.

John Burr Miller, San Antonio, Texas; Starling-Ohio Medical College, Columbus, 1910; member of the American Medical Association; formerly local physician and surgeon for the San Antonio and Aransas Pass Railroad; died June 11, aged 70, of brain tumor.

Edward Brent Mitchell, Lawton, Okla.; University of Louisville (Ky.) Medical Department, 1893; for many years affiliated with the Indian Service, serving as physician in charge of the eye, ear, nose and throat department of the Kiowa Indian Hospital; draft examiner during World War I; recently received recognition for his "faithful and loyal service" during World War II in the form of a selective service medal; for many years president of the Home Building and Loan Association; died August 13, aged 78.

Sheldon Alexander Morris, Jacksonville, Fla.; Medical Department of Tulane University of Louisiana, New Orleans, 1888; member of the American Medical Association; past president of the Duval County Medical Society; co-founder and president of the De Soto Sanatorium, now known as St. Vincent's Hospital; died September 12, aged 81, of bronchopneumonia.

William A. Moser, Grants Pass, Ore.; Medical College of Indiana, Indianapolis, 1903; died in August, aged 76.

Harry Clarke Moses, Prattsburg, N. Y.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1908; served during World War I; killed August 30, aged 68, in an automobile accident.

Raymond William Paul ⊕ Richmond, Va.; Medical College of Virginia, Richmond, 1918; on the staffs of the Retreat for the Sick and the Stuart Circle Hospital; died in a local hospital September 22, aged 53, of hypertensive cardiorenal disease.

Harold Vincent Phelan ⊕ Cleveland; Georgetown University School of Medicine, Washington, D. C., 1921; specialist certified by the American Board of Ophthalmology; on the staff of St. Alexis Hospital; died in Shaker Heights September 1, aged 51, of coronary thrombosis.

Clarence Leighton Poley ⊕ The Dalles, Ore.; Northwestern University Medical School, Chicago, 1908; county health officer; on the staff of The Dalles Hospital, where he died August 8, aged 67, of cerebral hemorrhage.

Charles Marius Pomerat, Springfield, Mass.; School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal, Que., Canada, 1894; died in the Brattleboro Retreat, Brattleboro, Vt., September 17, aged 83, of bronchopneumonia and cerebral arteriosclerosis.

Alfred Joseph Radgens, Detroit; Detroit College of Medicine, 1903, died in the Mount Carmel Mercy Hospital September 9, aged 67, of coronary thrombosis.

Charles Edward Ralph, Lansdowne, Pa.; George Washington University School of Medicine, Washington, D. C., 1915; served during World War I; major, medical reserve corps, U. S. Army, not on active duty; formerly affiliated with the Veterans Administration; died September 12, aged 73.

Robert A. Range, Elizabethton, Tenn.; Kentucky School of Medicine, Louisville, 1898; died August 30, aged 72, of cerebral hemorrhage.

John Franklin Reeves ⊕ Bridgeton, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1911; member of the executive committee and past president of the Cumberland County Medical Society; served during World War I and on the examining board of the Selective Service during World War II; at one time served on the board of education; on the staff of the Bridgeton Hospital; died September 18, aged 60, of coronary thrombosis.

Daniel Edward Remsberg ⊕ Roanoke, Va.; University of Maryland School of Medicine, Baltimore, 1905; medical director of the Norfolk and Western Railway; died September 14, aged 72, of coronary occlusion.

Carl Martin Roan ⊕ Minneapolis; University of Minnesota College of Medicine and Surgery, Minneapolis, 1908; fellow of the American College of Surgeons; served during World War I and as deputy coroner of Hennepin County; on the staff of the Deaconess Hospital; died September 11, aged 68.

Harry Lewis Rothblatt, Boston; Baltimore Medical College, 1908; died March 2, aged 61, of coronary thrombosis.

Joseph Napoleon Roy ⊕ Webster, Mass.; Baltimore University School of Medicine, 1902; died March 19, aged 74, of myocardial failure.

Philip Melbourne Schell, New York; Syracuse University College of Medicine, 1938; served an internship at the Hospital of the Good Shepherd in Syracuse and the Syracuse Memorial Hospital; a first lieutenant in the medical corps, Army of the United States, during World War II; died in the Columbus Hospital Sept. 17, 1945, aged 31.

Louis P. Schroeder, Addieville, Ill.; Hospital College of Medicine, Louisville, 1892; died September 13, aged 79.

J. Campbell Smith, Pasadena, Calif.; University of Maryland School of Medicine, Baltimore, 1885; member of the American Medical Association and the Missouri State Medical Association; formerly on the staffs of St. Luke's Hospital, St. Louis Skin and Cancer Hospital and the Evangelical Deaconess Hospital, all in St. Louis; died September 18, aged 86.

John De Forest Smith, Dayton, Ohio; Eclectic Medical Institute, Cincinnati, 1898; on the staff of the Miami Valley Hospital; died September 22, aged 74, of generalized lymphosarcoma.

John Hudson Storer, New York; New York Homeopathic Medical College and Hospital, New York, 1891; member of the American Medical Association; affiliated with the Community Hospital, where he died September 9, aged 80.

Ernest A. Spicker, Adams, Mass.; Albertus-Universität Medizinische Fakultät, Königsberg, Prussia, 1924; died March 27, aged 46, of trichinosis.

Charles Jewett Watson, Thomaston, Maine; Medical School of Maine, Portland, 1898; died in Dartmouth, Mass., June 30, of coronary thrombosis.

PUBLIC HEALTH SERVICE

Leslie Leon Lumsden ⊕ medical director, U. S. Public Health Service, retired, New Orleans; born in Granite Springs, Va., June 14, 1875; University of Virginia Department of Medicine, Charlottesville, 1894; did graduate work at Johns Hopkins University, Baltimore, 1894-1895; commissioned assistant surgeon in the U. S. Public Health Service in 1898; and assigned to New Orleans to assist in handling yellow fever epidemics; credited with being one of the first to suggest that yellow fever was transmitted by insects; served in California during the first outbreak of bubonic plague reported in the United States at the turn of the century, then was assigned to the Hygienic Laboratory, Washington, D. C., now the National Institute of Health, because of the prevalence of typhoid in the District of Columbia; continued his investigations of typhoid in many parts of the country; at Yakima, Wash., organized the first full time county health department in the United States; made house to house sanitary surveys in eighteen counties of sixteen states; became a passed assistant surgeon in 1903, surgeon in 1912, senior surgeon in 1928 and became medical director in 1930, serving until 1939, when he retired; member of the American Public Health Service; district director and research worker in New Orleans from 1931 to 1939; associated with the Tennessee Department of Public Health from 1939 to 1941; since 1943 lecturer in epidemiology at the University of Texas Medical Branch in Galveston; during World War I was assistant surgeon general in the U. S. Public Health Service; author of various U. S. Public Health Service publications on typhoid, rural sanitation, rural health work, tuberculosis and poliomyelitis; died in the U. S. Marine Hospital November 8, aged 71, of leukemia and pneumonia.

Foreign Letters

LONDON

(*From Our Regular Correspondent*)

Nov. 2, 1946.

The Morale of the Soldier

At the Royal Society of Medicine was witnessed the unusual occurrence of a lecture on a medical subject by Field Marshal Montgomery, who delivered the Lloyd Roberts lecture, on the morale of the soldier. High morale, he said, was a quality without which no war could be won, and it should interest the medical profession because it was a mental product. As a citizen he would reflect the national character, which was therefore of great importance, and anything that weakened this weakened the army. In war the moral stature of some men would increase. Others, under the stress of battle, surrendered to fear and to fatigue and allowed their characters to disintegrate. Morale was a mental quality which maintains human dignity and develops latent heroism. High morale drew a man forward against his own desires. It is not toughness, though tough men may occasionally perform high acts of bravery. Four basic factors are essential to high morale: leadership, discipline, comradeship and self respect. Good morale is impossible without good leaders; all men are frightened at some time or other to a greater or less extent, and in fear men band together and look for guidance. At such moments they are not capable of standing alone: they find the burden too great. The leader accepts the burdens of others and earns their gratitude thereby and the right to lead them. The quality men recognize in their leader is decision. Fear makes a man sluggish and indecisive. The leader's power over his men is based on his ability to cut through that fear paralysis and to help others to escape from it. His greatest asset is his ability to act normally in abnormal circumstances and to think rationally when his men have ceased to think.

The object of discipline is the conquest of fear. The basis of fear is the awareness of danger, which comes when a man thinks that he is opposed by something more powerful than himself. Discipline helps him to lose his own identity and create a corporate sense. It also implies a conception of duty; but Montgomery thought that this did not embrace abstractions such as freedom, democracy, empire. A man's sense of duty extended to the friends around him.

This brought Montgomery to his third factor, comradeship. Morale cannot be good unless men come to have affection for one another. Comradeship is the great antidote to fear. Self respect, his fourth factor, develops if the other three are present. A powerful contributory factor to morale is success; it is not possible to maintain morale during a long period of defeat.

Finally the field marshal returned to his theme that the soldier is first of all a citizen. Nothing weakened a man more than trouble at home. The soldier had to have good living conditions and always good food, but there is a danger of considering welfare as an end. It will never produce high morale by itself because it is essentially soft. Hardness and privation are the school of a good soldier, idleness and luxury his enemies. It was not for nothing that one of the great rallying calls of the British had been the cry "Blood, toil, tears and sweat."

Research on Rheumatism

As far back as 1922 the Ministry of Health conducted a sample survey of insured workers to determine the incidence of the complaints commonly called rheumatism. It was found that these were responsible for a sixth of the cost of illness, and later a higher estimate was made. In 1945 the Medical Advisory Committee of the Ministry of Health recommended that diagnostic and research centers should be established for the study of chronic rheumatism and improvement in diagnosis and treatment. These centers were to be located in university medical schools and teaching hospitals. The Nuffield Foundation has made a grant of $400,000 spread over ten years toward establishing a center at the University of Manchester. This will be in the teaching hospital of the university, the Royal Infirmary, and will deal with short-stay inpatients and outpatients, who will be referred from outlying clinics in the region. For long-stay inpatients there will be a clinic at a base hospital near the center and a second base hospital in the country. At the base hospitals lengthy investigations will be carried out and problems of rehabilitation studied. The scheme will insure access to a large number of cases, especially in the early stages, which are considered requisite for a successful attack on the causation, diagnosis and treatment. At the center the work will cover two main fields: the clinical, sociologic and industrial aspects of the disease, and the fundamental study of the disease by pathologic, bacteriologic and biochemical methods. The clinical study will be under the direction of a physician who will have the cooperation of the orthopedic, physical therapy and dental departments of the university. The social aspects of the disease will be studied in cooperation with the University Department of Industrial Health. Pathologic conditions of bones and joints will be investigated under the direction of a pathologist expert in the subject. An important object is the diffusion throughout the health services of the area of knowledge gained at the university center and the bringing of physicians in the outlying area into closer relation with the medical school.

Revision of the International List of the Causes of Death

The registrar general of births, deaths and marriages announces that in connection with the revision in 1948 of the International List of Causes of Death the minister of health has appointed an advisory committee to consider from a medical point of view and to advise on the alterations to be suggested by the government. A number of physicians have been appointed to the advisory committee, including Dr. A. Bradford Hill, professor of medical statistics, London University, and Dr. Percy Stocks, medical statistician of the General Register Office. Recognition of the importance to medical research of internationally comparable statistics of causes of death inspired the formulation of the present classification, which was adopted by the International Institute of Statistics in 1893 and which has been revised on five occasions by an international conference convened decennially since 1900 by the French government. The main achievements of the conference have been the revision of the International List of the Causes of Death in accordance with scientific advances and initiation of the agreement relating to statistics of the causes of death signed in 1934 on behalf of twenty governments, which undertook to compile and publish their statistics according to the agreed International List. Provision has now been made for the next revision in 1948 and the establishment of an international nomenclature of diseases to be carried out under the auspices of the World Health Organization.

A National Radium Center

The government has decided to establish a national center for the processing and distribution of radium, radon and artificial radioactive substances required for scientific, medical and industrial purposes. The center will be operated by a private company, Thorium Limited, acting as agents for the Ministry of Supply. As a first step the ministry will purchase the radiochemical business owned by Thorium Limited, excepting the manufacture of luminous compounds and other secondary industrial products. The extraction of radon, which was carried on during the war under the supervision of the Medical Research Council, will be transferred to the new center. The work there will be closely coordinated with the ministry's activities in the field of atomic energy. It will be controlled by a council which will include representatives of the ministry, of the managing agent and of users of its products.

PARIS

(From Our Regular Correspondent)

Oct. 31, 1946.

Centenary of the Academy of Surgery

On Aug. 25, 1843 seventeen young surgeons of the Paris hospitals, under the presidency of Auguste Berard, created the Society of Surgery, which became later on the Academy of Surgery of France. The centenary of the academy, postponed in 1943 on account of the Nazi occupation, was celebrated on the 9th of October under the presidency of Professor Basset at the Paris Town Hall. Dr. Louis Bazy outlined the history of this society of scientists. Among the representatives of foreign societies of surgery who brought messages were Dr. Mayer, representing the International Society of Surgery, Professor Petitclerc from Canada, Professor Whipple from the United States, Sir Max Page of the Royal College of Surgeons, Mr. James Graham, Professor Learmonth from England, Professor Gruca from Poland, Professor Girasek from Czechoslovakia and Professor Bengolea from Argentina. On behalf of the Paris municipality, Dr. P. Rouques drew up a plan for the reform of the Paris hospital system: reconstruction and enlargement of hospitals, one emergency center with powerful means of action, a corps of anesthetists, a special school for surgeons, institution of better living conditions and old age insurance for doctors.

Kinodensigraphy, a Method for Registering Invisible Pulsation of the Pulmonary Parenchyma

At a meeting of the Society of the Paris Hospitals, Professor Kourilsky presented a new method of exploration of a physiopathologic field, yet unpublished, evolved by Maurice Marchal for registering radiologic variations up to now invisible. The patient has the x-ray bulb at the back; a special radioelectric cell is placed at a distance from the thoracic wall. The x-ray beam is strongly diaphragmed, so that only a split beam of light can pass through it. By this method and by employing simultaneously several radioelectric cells, the measuring of the rapidity of circulation in a pulmonary arteriole, as well as the duration of the passage of the blood from the arterial level to the venous level of the lung, is possible. Kinodensigraphy can be used for diagnosis and for therapeutic control in all pulmonary diseases as well as in those of the heart and the blood vessels.

A New Medical Review

A new international review of psychoanalysis and of human sciences has been issued under the title of *Psyché*. It is published under the patronage of Prince Louis de Broglie, perpetual secretary to the Academy of Science, of Dr. Toulouse, president of the Mental Hygiene League, and of other personalities of the medical world; the director is Maxim Clouzet. In the first issue, among other contributions, are to be found articles by Dr. René Laforgue on psychoanalytic sociology, Dr. Gisèle Galy on twenty-five years of French medical hygiene and Dr. Juliette Boutonier on the crisis of adolescence.

Miscellaneous

The Academy of Surgery has commemorated the death of Dr. Howard Lilienthal of New York, a foreign associate member. During the first world war he conducted in France a specialized unit organized by the Mount Sinai Hospital. The academy has also commemorated the death of Professor P. N. Hansen of Copenhagen, a foreign associate member.

Professor Louis Bugnard, professor of biology at the Toulouse Faculty of Medicine, has been appointed director of the National Institute of Hygiene in the place of Professor A. Chevallier, retired.

The first chairmanships of labor medicine have been created at the Faculties of Paris, Lyons and Lille.

ITALY

(From Our Regular Correspondent)

Naples, Oct. 1, 1946.

The Price of Drugs

During the last few months the Italian market has become seriously overloaded with American drugs. Large quantities of hormones, vitamins and tonics have been mailed from relatives in the United States to some people here in order to make a profitable business. All these drugs remain now unsold in the private homes of these people. They are far too expensive; furthermore, there is an abundance of Italian drugs. The only well known American drugs for which substitutes are not available at present are folic acid, penicillin and streptomycin. Folic acid costs 200 lire per tablet. Two hundred thousand units of penicillin may be obtained for 1,500 lire (six months ago the price was 8,000 lire). The price of streptomycin is 25,000 lire per gram. French and Swiss firms which have their own branches in northern Italy are now competing with the expensive American drugs by selling their products for the same price as the Italian drugs.

Meeting of Radiologists

At a convention held September 21-23 the radiologists of Italy were encouraged to learn of the fluoroscopic station in New York, where in the course of a few days chest examinations of three million of the population were carried out for diagnostic purposes. A fluoroscopic station, not exactly like New York's but modern and very active, is that of Milan, where it is reported that latent tuberculosis was found in 2 to 3 per cent of 100,000 persons examined in a few days; this is considered a very low percentage. Vice versa, 50 per cent of latent forms were demonstrated on fluoroscopy in the antiaircraft corps, where in wartime there was an influx of all those who had been rejected from the army and from the navy for physical deficiency. Among other subjects discussed at this meeting were angina, melanoblastoma, carcinoma, lupus and tomographic studies of tumors of the lungs and of dense para-aortic shadows. The chairman was Professor Vallenbona, who is considered in Italy to be the inventor of the tomographic method.

BELGIUM

(From Our Regular Correspondent)

Sept. 27, 1946.

Medical Supervision of Schools in the Congo

A plan is taking shape which is truly beneficial from the point of view both of hygiene in general and particularly of the health of our colonial pupils. From now on all the educational establishments of the Belgian Congo and of its annexed territories of Ruanda-Urundi are to be subject to regular medical inspection. This service is assigned to the physicians of the government and to those who are approved by the governor of each province or by the governor of Ruanda-Urundi. In the schools for Europeans the students are examined at the beginning of the school term. Those whose state of health requires special supervision or who are especially designated by the master of the school or by other members of the teaching staff are reexamined by the medical inspector. The premises likewise are the object of annual inspection. The doctors in charge of these investigations have the right to order measures to be taken if contagious diseases arise. They must make sure that a medical record is kept of each student, they are to exercise medical control over sports, and in the boarding houses and boarding schools they are to supervise the diet. In the schools for the natives, the medical inspectors likewise proceed with the annual examination not only of the pupils but also of the buildings, annexes and furnishings. The keeping of the medical record cards for each individual must be a rule in large groups. The diet and sports likewise should not escape medical inspection.

Correspondence

"THE HELPING HAND," BY EMILE RENOUF

To the Editor:—It is rather out of the ordinary to have ditorial comment on an advertisement in THE JOURNAL, but Iead Johnson and Company in their advertisement in the issue f October 5 reproduced a picture that to my mind is out of he ordinary. Since 1902, when at the age of 10 years I began o be a frequent visitor to the Corcoran Art Gallery in Washngton, I have been very fond of a painting called The Helping Iand, by Emile Renouf, painted in 1881. Renouf, the cenennial of whose birth was June 23, 1945, spent his life in his ative Honfleur, across the river from Havre, and the grandather and grand-daughter in this picture are fishing folk of that egion. The painting has its own story to tell. What I should ike to call to the attention of any who may enjoy this excellent rint is that the Corcoran Gallery's having the painting in the irst place is a monument to the integrity of George Ingraham Seney, a Brooklyn banker whose name is linked with the Iethodist Hospital of Brooklyn, of which he was a heavy beneactor. Part of the story is told in Appleton's Dictionary of merican Biography. He got into financial straits over some ailroad financing in the early eighties which went bad, and to rotect the depositors in his bank against loss he put up his nansion and his art collection at auction. The latter, with a ook value of $500,000, brought a little more than $400,000 at forced sale. The Corcoran Gallery bought Renouf's painting t this sale for $7,600. With the money realized from the sale f the house and the pictures, Seney paid off his depositors in ull. The Helping Hand has brought pleasure to innumerable isitors to the Corcoran Gallery who do not have knowledge of he story back of it. It adds to my enjoyment of it to know hat a man who valued his integrity above money owned it and arted with it. It seems opportune in an opportunist age to nake this bit of history available to the public.

RAMSAY SPILLMAN, M.D., New York.

ENURESIS

To the Editor:—I have read with considerable interest the article on "Enuresis, a Psychologic Problem of Childhood," by Dr. Clifford Sweet in THE JOURNAL, October 5. I am in agreement with Dr. Sweet's concept of the condition and with his recommendations for treatment. The treatment he recommends includes (1) examinations for organic disease or defect and their correction, if any are found (such defects are probably present in only a small percentage of cases of enuresis) and (2) psychotherapy, which, as stated by Dr. Sweet, consists in "reeducation of the parents and the child rather than the use of any drug, change in diet or fluid intake or any surgical instrument."

There is, however, a specific form of psychotherapy which I should like to recommend. It should probably be referred to as a psychoneuromuscular exercise. It is very simple and succeeds only in the case of children who are old enough to cooperate. This includes all who are over 6 years of age and even some who are younger.

The child is instructed to stop and start the flow of urine two or three times during each daytime micturition. This procedure exercises the psychoneuromuscular mechanism as a whole and helps to establish the dominance of the higher psychic centers over the purely reflex neuromuscular mechanism. The cerebral dominance which is established soon carries over into the unconscious period of sleep. In the case of small children, it is well for one of the parents to stand by during daytime micturition and coach the child in the exercise of starting and stopping the flow.

As a full time pathologist I have not had the opportunity to recommend this exercise directly to patients. However, I know of several cures obtained by physicians who at one time or another have consulted me regarding their enuresis problems. Many children will be cured in one to three weeks' time by the faithful performance of the exercise recommended. One woman about 20 years of age had postponed her marriage several times because of enuresis. She rapidly cured herself by the foregoing psychoneurosphincter exercise.

I have wanted to report this simple treatment for several years but have hesitated to do so because I have not collected documented case histories.

EDWIN E. ZIEGLER, M.D., Lancaster, Pa.

AFTER-CARE OF CORNEAL FOREIGN BODIES

To the Editor:—In the New York Navy Yard, where 70,000 civilians were employed, 52,704 injuries were reported in 1944. Of these, 11,380, or 21 per cent, were accidents to the eye, predominantly caused by the presence of foreign bodies.

While the foreign bodies in the conjunctiva were readily removed without loss of time on the part of the employees, those in the cornea, particularly the metallic bodies with a circumscribed rust ring, were not as easily taken out and usually gave rise to absenteeism. These lost man hours were due chiefly to the fact that the eye was covered after removal of the particle, with a consequent loss of binocular vision. As this incurred an added hazard to an already hazardous job, the patients frequently were permitted to go home or were transferred temporarily to an unskilled nonhazardous position. Ocular pain, too, was a definite contributing cause of time lost.

Following the removal of an embedded foreign body in the cornea, it is unnecessary to put a patch over the eye even in an atmosphere where foreign bodies abound. This observation is based on the treatment of several hundred cases. No apparent retardation of healing was noted in comparing a group of this type with an identical series of patients whose eyes were occluded.

At the Navy Yard, after an embedded corneal foreign body was removed, a small amount of ocular anesthetic ointment, butyn sulfate 2 per cent, was placed in the lower cul-de-sac, and the eye was left uncovered to preserve binocular vision. A systemic anodyne, such as 15 grains (1 Gm.) of acetylsalicylic acid, was given orally. In order for the patient to continue his work in comfort, the local application was repeated at least once or twice during his working hours. For this purpose he was supplied with a limited amount of the analgesic, the commercial tube of ⅛ ounce of ointment being an excessive quantity. A gelatin capsule of O size, holding one sixth of the contents in the tube, provided an ample amount to insure the patient against discomfort for the ensuing twelve hours. Such a capsule proved satisfactory and contained sufficient salve for four treatments. Each patient was also given another 15 grains of acetylsalicylic acid, which he was instructed to take for the prevention of subsequent pain.

Considering the many establishments where conservation of working time is desirable, this plan of treatment recommends itself since it affords adequate therapy, reasonably administered, and is consistent with good results.

ARTHUR A. KNAPP, M.D., New York.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Charitable Hospitals: Liability for Negligence of Nurse and Intern in Giving Blood Transfusion to Wrong Person.—The plaintiff sued for damages for personal injuries resulting from the alleged negligence of the defendant in the administration of its hospital. From a judgment for the plaintiff the defendant appealed to the supreme court, appellate division, fourth department, New York.

The plaintiff entered the defendant's hospital on advice of her physician and was assigned as a paying patient to a private room. After undergoing an operation she recovered to the point where it was anticipated by her and her physician that she would leave the hospital forty-eight hours later. Prior to her leaving, an intern and a nurse entered her room and informed her that she was to have a blood transfusion. The plaintiff asked who the donor was to be and, on being informed by the nurse that it was to be her daughter, the plaintiff replied "I haven't got a daughter." The nurse and intern, however, went ahead and started the transfusion. During its course the plaintiff had a chill and a rising temperature and the transfusion was stopped and her physician summoned. The plaintiff suffered severe headaches and in later days became mentally ill and spent some time in a state hospital for the insane. At the time of the transfusion she was at, or approaching, her menopause, and the transfusion was the turning point that caused her subsequent illness and suffering.

Blood transfusions at the hospital were ordered only by a patient's attending physician or by a house physician. In this case one of the physicians in the hospital, Dr. James S. Houck, following the usual practice, left at the office of the hospital a filled out form directing the giving of a blood transfusion to one of his patients, a woman on the same floor of the hospital as the plaintiff. In due course of time the form with its directions and the blood to be used were given to the intern and the nurse. Through some mistake the intern and the nurse entered the plaintiff's room and gave her the transfusion.

The question here involved, said the court, is whether or not the defendant, a charitable hospital, is liable in damages to the plaintiff, a paying patient, for injuries due to the mistake of an intern attached to the defendant hospital. Historically the courts have been chary to fix liability on charitable hospitals, especially for torts to patients. Originally there was a theory that a patient entering a charitable hospital, owing to the very nature of its eleemosynary work, waives any claim for damage resulting to the patient in the hospital. This theory is not now extant in New York, at least with reference to paying patients. Liability can be placed on a charitable hospital for damage to a patient from the negligent performance of an administrative or ministerial act on the part of an employee, but it is very substantially established in the law of this state that a hospital is not liable for a tort committed on a patient by a physician, nurse or other employee in his or her performance of professional duties, provided the hospital has exercised due care in the selection of properly qualified professional staff. If the hospital joins in a tort perpetrated by a professional member of its staff, however, or could have prevented such tort in the exercise of proper supervision of occurrences in the hospital, then there might be liability on the part of the hospital to the person injured.

Received and kept as a patient at the hospital, the plaintiff in this case was entitled to be protected by the hospital and its employees against trespass, assault and negligence if such trespass, assault or negligence could be reasonably anticipated by the hospital. If the nurse-intern team had given the transfusion to the proper patient, they were doing it in the place of her physician and in so doing would not act in any respect on behalf of, or for, the hospital. No matter how seriously they would have erred in giving the transfusion to the proper patient, if they had done so they could not cause liability on the hospital by such error. But the transfusion was not given to the proper patient but to the plaintiff. What happened here was at least negligence on the part of the hospital's employees, if not trespass and assault. To avoid such negligence or act of misconduct would be the duty of the hospital, and yet here such negligence and misconduct were committed by the very persons whom the hospital employed for certain duties and thus gave access to the rooms and persons of patients. Their entrance into the wrong room caused the professional nature of their errand to cease. As employees of the hospital they, among other employees, had placed on them the duty of protecting patients. After notice was given to them by the plaintiff that she was not the patient for whom the transfusion was intended, they, as servants of the hospital, should have ceased in their effort to give the transfusion and should have protected her from the torts inflicted on her. In their failure to perform this duty, they did not act as professional persons, and there is no reason why their failure should not cast liability on the hospital. The judgment in favor of the plaintiff was affirmed.—*Necolayff v. Genesee Hospital, 61 N. Y. S. (2d) 832 (N. Y., 1946).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Board in Specialties were published in The Journal, Nov. 23, page 734.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, Jan. 21-23. Sec., Dr. B. F. Austin, 519 Dexter Ave., Montgomery.

Delaware: *Examination.* Dover, Jan. 14-16. *Endorsement.* Dover, Jan. 21. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

District of Columbia: * *Reciprocity.* Washington, Dec. 9. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington.

Indiana: *Examination.* Indianapolis, June. Exec. Sec., Board of Medical Registration and Examination, Miss Ruth V. Kirk, 627 K. of P. Bldg., Indianapolis.

Kansas: Kansas City, Dec. 4-5. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. 7th St., Kansas City.

Kentucky: *Examination.* Louisville, Dec. 16-18. Sec., State Board of Health, Dr. P. E. Blackerby, 620 S. Third St., Louisville 2.

Maryland: *Examination.* Baltimore, Dec. 10-13. Sec., Dr. E. H. Kloman, 1215 Cathedral St., Baltimore 1. *Homeopathic.* Baltimore, Dec. 10-11. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

Michigan: * Ann Arbor, Dec. 9-11. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

Minnesota: * Minneapolis, Jan. 21-23. Sec., Dr. J. F. Du Bois, 230 Lowery Medical Arts Bldg., St. Paul 2.

Mississippi: *Reciprocity.* Jackson, Dec. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson 113.

Nebraska: * *Examination.* Omaha, June 1947. Dir., Bureau of Examining Board, Mr. Oscar F. Humble, State Capitol Bldg., Lincoln.

New Hampshire: Concord, March 13. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

North Carolina: *Examination.* Winston-Salem, Dec. 16-19 postponed. *Endorsement.* Raleigh, Jan. 16. Act. Sec., Mrs. L. McNeill, 226 Hillsboro St., Raleigh.

North Dakota: Grand Forks, Jan. 7-10. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

Ohio: *Examination.* Columbus, Dec. 3-5. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Oklahoma: * *Reciprocity.* Oklahoma City, Dec. 29-30. Sec., Dr. J. D. Osborn Jr., Frederick.

South Dakota: * *Examination and Reciprocity.* Vermillion, Jan. 21-22. Sec., Dr. Gilbert Cottam, State Capitol Bldg., Pierre.

Tennessee: * Memphis, Dec. 18-19. Sec., Dr. H. W. Qualls, 130 Madison Ave., Memphis 3.

Utah: Salt Lake City, Dec. 18-20. Asst. Dir., Department of Registration, Miss Rena B. Loomis, 324 State Capitol Bldg., Salt Lake City 1.

Vermont: *Examination.* Burlington, Jan. 31-Feb. 1. Sec., Board of Medical Registration, Dr. F. J. Lawliss, Richford.

Virginia: Richmond, Dec. 3-6. Sec., Dr. J. W. Preston, 30½ Franklin Rd., Roanoke.

Washington: *Examination.* Seattle, January 1947. Sec., Mr. Nelson Vaughn, Olympia.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Arizona: Dec. 10. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

Colorado: Denver, Dec. 11-12. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

Iowa: Des Moines, Jan. 14. Corresponding Sec., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

South Dakota: Sioux Falls, Dec. 6-7. Sec., Dr. G. M. Evans, Yankton.

Tennessee: Memphis and Nashville, Dec. 19-20. Sec., Dr. H. W. Qualls, 130 Madison Ave., Memphis 3.

Wisconsin: Milwaukee, Dec. 7. Sec., Professor Robert N. Bauer, 152 W. Wisconsin Ave., Milwaukee 3.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

32:135-276 (Aug.) 1946

Precordial Electrocardiogram in High Lateral Myocardial Infarction. F. F. Rosenbaum, F. N. Wilson and F. D. Johnston.—p. 135.

*Demonstration of Ventricular Septal Defect by Means of Right Heart Catheterization. Eleanor deF. Baldwin, Lucille V. Moore and R. P. Noble.—p. 152.

Simplified and More Standardized Technic for Recording Multiple Precordial Electrocardiograms. A. J. Geiger and Jessamine R. Goerner.—p. 163.

Influence of Variations in Atmospheric Temperature and Humidity on Rates of Water and Heat Loss from the Respiratory Tract of Patients with Congestive Heart Failure Living in a Subtropical Climate. G. E. Burch.—p. 190.

Effect of Meals on Electrocardiogram in Normal Subjects. E. Simonson, A. Henschel and A. Keys.—p. 202.

Velocity of Blood Flow in Normal Pregnant Women. B. Manchester and S. D. Loube.—p. 215.

Acute Pericarditis in Young Adults. R. M. Nay and N. H. Boyer.—p. 222.

*Incidence of Rheumatic Fever and Heart Disease in School Children in Dublin, Ga., with Some Epidemiologic and Sociologic Observations. R. W. Quinn.—p. 234.

*Anomalous Origin of Left Coronary Artery from Pulmonary Artery: Report of Case Diagnosed Clinically and Confirmed by Necropsy. S. Eidlow and Eleanor R. Mackenzie.—p. 243.

Catheterization of Right Side of Heart.—According to Baldwin and her co-workers clinical diagnosis of isolated ventricular defects has been entirely dependent on the presence of the pathognomonic Roger murmur, a localized loud blowing systolic murmur heard best just to the left of the midsternum and often accompanied with a palpable thrill. Since the shunt is arteriovenous, cyanosis is not present except rarely as a terminal manifestation. Many ventricular septal defects are not recognized during life but are found only at necropsy. The development of a technic for the catheterization of the right side of the heart in man presents a new diagnostic aid for the detection of this congenital defect. Following the introduction of a catheter into the right side of the heart, samples of blood may be withdrawn from various areas by determining the position of the tip of the catheter by fluoroscopy. The presence of an arteriovenous shunt may then be demonstrated by the comparison of the respiratory gas contents of these blood samples with one another and with samples of arterial blood. Further information on the hemodynamics may be obtained by connecting the intracardiac catheter to a recording type of manometer, such as the one described by Hamilton, and analyzing the resultant pressure tracings. By direct observation of the movements of the catheter within the right side of the heart, impressions as to the size, shape and location of the chambers of the heart may be acquired which supplement the information obtained from the routine x-ray and fluoroscopic studies. The authors report observations made by means of right heart catheterization on the hemodynamics of two subjects with congestive failure of obscure etiology. In both subjects a large ventricular septal defect was demonstrated by the arterialization of the right ventricular blood.

Rheumatic Fever and Heart Disease in School Children.—Dublin, Ga., the site of the U. S. Naval Hospital for Rheumatic Fever, seemed well suited for a survey of heart disease in school children, since it is located in one of the Southern states at a latitude of 32.5 degrees and a longitude of 83 degrees. The elevation is 234 feet. The annual rainfall is approximately 50 inches. A cardiac survey of 401 school children in the fifth, sixth, seventh and eighth grades revealed 6 cases of organic heart disease, giving an incidence of 1.5 per cent. Of these, 4 had rheumatic heart disease and 2 had congenital heart disease. The incidence of rheumatic heart disease was found to be 1 per cent for all children examined, 1.26 per cent for white children and 0.60 per cent for Negro children. The incidence of congenital heart disease was 0.5 per cent. The incidence of rheumatic fever was 2 per cent. The incidence in white children was 2.10 per cent and in Negro children 0.60 per cent. Climatologic and socioeconomic factors such as dampness, crowding, inadequate housing, malnutrition and low economic status, which are very important epidemiologically in rheumatic fever and rheumatic heart disease, were found to exist in Dublin, Ga.

Anomalous Origin of Left Coronary Artery.—Eidlow and Mackenzie give the history of a female infant who was born in February 1945 and died in June of the same year. The anomalous origin of the left coronary artery from the pulmonary artery was diagnosed during life. The observations on which the diagnosis was made were paroxysms of cardiac pain characterized by sweating, pallor, cyanosis and dyspnea, great enlargement of the heart both clinically and by x-ray examination, and electrocardiograms showing inversion of T waves in leads 1 and 2. These constitute a syndrome indicating inadequate arterial blood supply to the heart muscle. The clinical diagnosis was confirmed by necropsy, which revealed a left coronary artery arising from the pulmonary artery and supplying the left ventricle alone. No anastomotic coronary circulation existed. Pulmonary atelectasis, a feature of this case, has been recorded in other cases and is probably secondary to the hypertrophy and dilatation of the heart. Consistent with the majority of cases reported, this patient appeared normal at birth. There is no adequate explanation for the absence of symptoms during the early weeks of life. One may speculate that the blood supply to the myocardium may be adequate when activity is at a minimum. Another explanation suggested is that a slight patency of the ductus arteriosus, which may have escaped occlusion in the early weeks of life, permits a mixture of arterial with venous blood in the pulmonary artery.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

56:141-278 (Aug.) 1946

Roentgenologic Manifestations of Primary Pulmonary Coccidioidomycosis. M. Rakofsky and T. W. Knickerbocker.—p. 141.

Interlobar Empyema. J. Levitin.—p. 156.

*Multiple Fractures in Long Bones of Infants Suffering from Chronic Subdural Hematoma. J. Caffey.—p. 163.

Polyostotic Fibrous Dysplasia and Osteopathia Condensans Disseminata: Case Report. E. C. Osgood.—p. 174.

Traumatic Pneumocephalus Associated with Cerebrospinal Otorrhea. I. M. Tarlov and J. Mule.—p. 179.

Congenital Talonavicular Synostosis Associated with Hereditary Multiple Ankylosing Arthropathies. I. Weitzner.—p. 185.

Pathogenesis of Charcot's Joint. P. J. Delano.—p. 189.

New Series of Radiopaque Compounds: I. Chemical Structures, Channels of Excretion and Roentgenographic Uses. B. S. Epstein, S. Natelson and B. Kramer.—p. 201.

Capsules and Inserter for Use of Radium Cells in Treatment of Cancer of Uterine Fundus. L. A. Campbell.—p. 208.

Irradiation Sickness: Histamine Effect Teated with Benadryl: Preliminary Report. J. E. Lofstrom and C. E. Nurnberger.—p. 211.

Some Historical Data Relating to Discovery of Roentgen Rays. L. E. Etter.—p. 220.

Fractures in Long Bones of Infants with Subdural Hematoma.—Caffey reports 6 cases in which there were 23 fractures and 4 contusions of the long bones. In not a single case was there a history of injury to which the skeletal lesions could reasonably be attributed, and in no case was there clinical or radiologic evidence of generalized or localized skeletal disease which would predispose to pathologic fractures. It is possible that some of the fractures in the long bones were caused by the same traumatic forces which were presumably responsible for the subdural hematomas. This did not happen in the majority of the fractures, because 17 fresh fractures appeared many weeks and months after the first clinical manifestations of subdural hematoma and after the withdrawal of bloody fluid from the subdural space. In 1 case fractures in the long bones developed six months after the subdural tumor had been removed surgically. The author also considered the possibility that the long bones were injured and fractured during convulsive seizures. There is little evidence to support such a postulate. The author concludes that the presence of unexplained fractures in the long bones warrants investigation for subdural hematoma. Routine x-ray examination of the long bones in subdural hematoma is necessary for the identification of fractures, because many of them are silent clinically.

American Journal of Tropical Medicine, Baltimore

26:379-542 (July) 1946

Experimental Studies of Bullis Fever and Dengue Fever. H. R. Livesay, D. J. Wilson, M. Pollard and J. C. Woodland.—p. 379.
Residual Spraying of Dwellings with DDT in Control of Malaria Transmission in Panama, with Special Reference to Anopheles Albimanus. H. Trapido.—p. 383.
Epidemic Encephalitis in Far East: Review. J. Warren.—p. 417.
Experiments with Various Colombian Marsupials and Primates in Laboratory Cycles of Yellow Fever. M. Bates and M. Roca-Garcia.—p. 437.
Studies on Cyclic Passage of Yellow Fever Virus in South American Mammals and Mosquitoes: II. Marmosets (Callithrix Penicillata and Leontocebus Chrysomelas) in Combination with Aedes Aegypti. Mary B. Waddell and R. M. Taylor.—p. 455.
Dispersal of Aedes Albopictus in Territory of Hawaii. D. D. Bonnet and D. J. Worcester.—p. 465.
Studies on Imported Malarias: 5. Transmission of Foreign Plasmodium Vivax by Anopheles Quadrimaculatus. M. D. Young, J. M. Ellis and T. H. Stubbs.—p. 477.
Penicillin Therapy in Relapsing Fever: Report of Case. I. Fischer. —p. 483.
Mild Exanthematous Disease Seen in Schouten Islands. F. C. Weber, T. W. Oppel and R. W. Raymond.—p. 489.
Intestinal Helminthiasis: Clinical Survey of 618 Cases of Infection with Common Intestinal Helminths in Children. N. H. Einhorn and J. F. Miller.—p. 497.
Efficient Concentration Method (AEX) for Detecting Helminthic Ova in Feces (Modification of the Telemann Technic). E. H. Loughlin and N. R. Stoll.—p. 517.
Opportunies for Training and Research in Tropical Medicine and Public Health in Mexico. E. H. Hinman and M. M. Baez.—p. 529.
Heat Rash as Problem in Naval Service. G. J. Duffner.—p. 539.

Annals of Internal Medicine, Lancaster, Pa.

25:195-402 (Aug.) 1946

*Problem of Prolonged Hepatitis with Particular Reference to Cholangiolitic Type and to Development of Cholangiolitic Cirrhosis of Liver. C. J. Watson and F. W. Hoffbauer.—p. 195.
Medicine and Education. E. E. Irons.—p. 228.
Infectious Mononucleosis: Report of Epidemic in Army Post: Part II. H. F. Wechsler, A. H. Rosenblum and C. T. Sills.—p. 236.
Nutritional Status of Japanese Prisoners of War, Burma 1945. R. K. Kark, H. F. Aiton and E. D. Pease.—p. 266.
*Beriberi in Japanese Prison Camp. R. E. Hibbs.—p. 270.
Sudden Death in Rheumatic Fever. G. C. Griffith and R. W. Huntington.—p. 283.
Malaria Triad. T. H. Noehren.—p. 293.
Medical Man and Constitution. K. C. Sears.—p. 304.

Prolonged Hepatitis and Cholangiolitic Cirrhosis.—Watson and Hoffbauer report 8 cases of cholangiolitic hepatitis. Certain cases of prolonged hepatitis exhibit normal or relatively normal hepatocellular function in the presence of regurgitation jaundice. The histologic changes often appear inadequate to account for the jaundice. These consist of a varying amount of periportal lymphocytic infiltration, bilirubin staining of the liver cells, especially in the centers of the lobules, and bile thrombi. In the absence of sufficient evidence of this type to indicate intrahepatic biliary obstruction, it is believed that the continued regurgitation of bile supports the concept of increased permeability of the cholangioles. This regurgitation is manifested by hyperbilirubinemia, hypercholesterolemia, hyperphosphatasemia and pruritus. In some cases of epidemic hepatitis liver biopsy may fail to reveal appreciable hepatocellular injury when infectious activity is still manifest. Since in these cases there is often residual evidence of reduced hepatocellular function, it is believed that initially there was a more severe liver cell injury and that the prolonged regurgitation jaundice indicates more severe damage of the intrahepatic bile duct system than in the ordinary case. The authors suggest that the term cholangiolitic cirrhosis is more appropriate and distinctive than hypertrophic biliary cirrhosis. Regurgitation jaundice without ascites, but with pruritus, hypercholesterolemia and hyperphosphatasemia are prominent in this group of cases. The final stages of cholangiolitic cirrhosis following prolonged hepatitis may be indistinguishable anatomically from ordinary atrophic or portal cirrhosis. The cholangiolitic type of hypertrophic cirrhosis is believed to be distinct from the "hypertrophic" fatty cirrhosis which represents an intermediate stage between the fatty liver and the atrophic cirrhosis of chronic alcoholic addicts or other conditions in which dietary deficiency is probably the most important etiologic factor.

Beriberi in Japanese Prison Camp.—Hibbs reports observations on beriberi over a period of thirty-four months on about 8,000 Americans who had surrendered on Bataan and Corregidor. Beriberi had the highest incidence of vitamin deficiency disease, every one in the camp having some form of beriberi at one time or another. It also was responsible for more deaths than any other vitamin deficiency disease. A group of 96 cases of beriberi were selected for a therapeutic response experiment by a Japanese doctor. American doctors conducted the study. The patients selected had the severest form of painful feet. They all demonstrated the typical "Cabanatuan shuffle" and sensory manifestations of symmetrical ascending peripheral neuritis of beriberi. Conclusive results were not obtained because the patients were still issued a borderline starvation diet. The dosages and length of treatment were inadequate. Thiamine hydrochloride first corrected the anorexia, nervous manifestations, tachycardia and arrhythmia and improved the exercise tolerance of the heart in cases of beriberi. Beriberi peripheral neuritis responded sooner to the entire B complex than to thiamine hydrochloride alone. The intrathecal route of administration was no more efficacious than subcutaneous injection. Complete saturation of the body with thiamine hydrochloride was not attained by a short course of large doses. The author stresses that more vitamins can be bought in a grocery store than in a drug store. There may be nutritional causes of polyneuritis other than lack of thiamine. Palmar and plantar erythema are consistently seen in dry beriberi. "Beriberi spots" is a newly described skin lesion probably due to thiamine deficiency. Motor manifestations are often minimal or lacking in beriberi peripheral neuritis. Posterolateral column degeneration of the spinal cord in malnutrition is probably due to lack of vitamin B_1. An irreversible optic atrophy may result from severe beriberi.

Archives of Dermatology and Syphilology, Chicago

54:119-254 (Aug.) 1946

*Treatment of Basal Cell Epithelioma by Injection of Tissue Extracts: Preliminary Report. J. C. Amersbach, Elsie M. Walter and G. S. Sperti.—p. 119.
Scleroderma of Face Involving the Gingiva: Case. W. C. Davis and T. S. Saunders.—p. 133.
Uses and Abuses of Penicillin in Dermatology. F. E. Cormia and W. D. Alsever.—p. 136.
Etiologic Considerations of Keratosis Blennorrhagica: Report of Case in Which Penicillin Was Used. E. Ladany and J. D. Hughes.—p. 150.
Recurrent Genito-Oral Aphthosis and Uveitis with Hypopyon (Behcet's Syndrome): Report of 2 Cases. Helen O. Curth.—p. 179.
Acute Lupus Erythematosus Disseminatus Treated with Penicillin: Case. E. A. Strakosch.—p. 197.
Device of Value for Roentgen Ray Epilation. O. L. Levin and H. T. Behrman.—p. 200.
Lymphangioma Circumscriptum: Successful Results of Treatment with Solid Carbon Dioxide. J. Q. Gant Jr.—p. 202.
Yaws Clinic in New Georgia. L. Sompayrac and H. Spence.—p. 205.
Dermatitis Due to Preparation and Administration of Penicillin Solution. H. Goodman.—p. 206.
Sporotrichosis: Report of Case of Its Occurrence in California. A. Gelber.—p. 208.
Formula for Cryotherapy for Acne and Postacne Scarring. I. Zugerman.—p. 209.
Epilation by Electrodesiccation of Hairs of Scalp Infected by Fungi. M. J. Costello.—p. 210.

Injection of Tissue Extract in Treatment of Basal Epithelioma.—At the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital patients were selected with small basal cell epitheliomas varying in size from that of a pea to 3 or 4 cm. in the longest dimension. All types of basal cell epitheliomas were taken indiscriminately. Before treatment was given, a colored photograph was taken of the lesion and a biopsy was performed. The patient was then given a series of weekly injections of either spleen or liver extract. The extracts were produced from normal human spleens and livers obtained at necropsy from persons who died suddenly as the result of accident or heart failure. Amersbach and his co-workers review observations on 21 patients with basal cell epithelioma who were treated by this method. The lesion of 1 treated with spleen extract failed to regress. Fourteen have had complete regression and disappearance of the lesion. The remaining 6 are still under treatment, but all have shown regression. In none of the cases observed since completion of the treatment have there been signs of recurrence in the period of one to two years.

Archives of Pathology, Chicago

42:113-244 (Aug.) 1946

Radiate Formation on Pathogenic Fungi in Human Tissue. M. Moore.—p. 113.
Leukopenic Factor of Exudates: Mechanism Concerned in Leukopenia Induced by It. V. Menkin.—p. 154.
Experimental Endocarditis of Dogs. G. F. Dick and W. B. Schwartz.—p. 159.
In Vitro Studies on Physiology of Cells: Interactions of Thymic Cells and Oxidation-Reduction Indicator, 2,6-Dichlorophenolindophenol. R. Schrek.—p. 163.
Cerebral Concussion: Histochemical Demonstration of Nucleases in Cerebrospinal Fluid. E. A. Spiegel, M. Spiegel-Adolf and H. T. Wycis.—p. 175.
Experimental Medionecrosis of Aorta. J. G. Schlichter.—p. 182.
Course of Wound Healing in Skin of Mice Under the Influence of Carcinogens. M. Silberberg and Ruth Silberberg.—p. 193.
Disseminated Reticuloendothelial Tumor of Bone Marrow with Nodular Osteosclerosis. F. Windholz.—p. 206.
*Alloxantin: Investigation of Substance as Used in Experimental Production of Diabetes. P. A. Herbut, J. S. Watson and Ella Perkins.—p. 214.
Reaction of Rats Following Injection of Anti-Rat Heart Immune Serum. F. C. Bauer Jr.—p. 222.

Alloxantin in Experimental Production of Diabetes.—Herbut and his colleagues found that alloxantin administered by the intravenous route produced an effect similar to that of alloxan. There was temporary hyperglcemia followed by temporary hypoglycemia and then either transient hyperglycemia or, in a few of the animals, permanent hyperglycemia with excretion of sugar in the urine. Undesirable side effects consisted of thrombosis of the veins of the ears, severe pulmonary congestion and edema, and necrosis of the central portions of the hepatic lobules. The authors conclude that although the diabetogenic action of alloxantin is unequivocal, it is not a good substitute for alloxan because it is difficult to administer, it is toxic, and nonlethal doses will produce diabetes in only a few animals.

Archives of Surgery, Chicago

53:111-246 (Aug.) 1946

*Surgical Approach to Hypertension: Second Report. G. de Takats, G. W. Graupner, E. F. Fowler and R. J. Jensik.—p. 111.
Fractures of Carpal Scaphoid Bone: Analysis of 66 Cases. M. M. Bannerman.—p. 164.
Pericoronary Neurectomy in Abolishing Anginal Pain in Coronary Disease: Experimental Evaluation. M. Fauteux and O. Swenson.—p. 169.
*Intraperitoneal Administration of Succinylsulfathiazole and Phthalylsulfathiazole: Their Use in Prophylaxis and Treatment of Peritonitis. J. P. Young Jr. and W. H. Cole.—p. 182.
Lymphadenoid Goiter: Its Differentiation from Chronic Thyroiditis. C. C. Parmley and C. A. Hellwig.—p. 190.
Anaphylaxis-like Reactions Produced by Ascaris Extracts: III. Role Played by Leukocytes and Platelets in Genesis of Shock. M. Rocha e Silva, A. Porto and Sylvia O. Andrade.—p. 199.
Review of Urologic Surgery. A. J. Scholl, F. Hinman, A. B. Hepler, R. Gutierrez, G. J. Thompson, E. N. Cook and V. J. O'Conor.—p. 214.

Surgical Approach to Hypertension.—De Takats and his associates discuss observations on 52 patients, stressing the importance of rigid selection. In the first group, in which there was a clearcut indication for operation, the ages of the patients did not exceed 40 years. The systolic pressure varied between 200 and 150 mm. of mercury and the diastolic from 120 to 100. In these patients the pressure comes down to normal during sleep. The authors include in this group early adolescent hypertensive patients who are completely asymptomatic but have a bad family history and show exaggerated vasomotor reactivity. Also included are some patients who have advanced vascular damage in the retina, heart or kidney but who relax under sodium amytal to a diastolic pressure of 100 mm. In the 17 patients of this first group, the response was gratifying. Only 2 had recurrent hypertension, which was corrected after completion of a technically incomplete operation. In the second group operated on by the authors operability was debatable, but it is pointed out that some of these patients obtained unexpected relief and others had a slightly lower pressure but the organic damage was permanent and progressive. The patients in this group had organic vascular damage. Six of the 28 patients of this group showed recurrence. The third group consists of patients in whom splanchnic section is not indicated. Such patients have large recurrent hemorrhages or exudates in the retina. The diastolic pressure is extremely high and fixed. The urine contains albumin, casts and red cells. The urea clearance is less than 50 per cent of normal. Five such patients were operated on and no effect was noted. The authors discuss some of the problems of anesthesia, especially the avoidance of accumulation of carbon dioxide. They are convinced that so far a method has not been found which gives patients with hypertension as much benefit as the transdiaphragmatic splanchnic nerve section combined with dorsolumbar sympathetic ganglionectomy.

Intraperitoneal Administration of Sulfonamides in Peritonitis.—Young and Cole found that succinylsulfathiazole and phthalylsulfathiazole implanted in the peritoneal cavities of human beings or dogs are rapidly absorbed into the blood stream. The average peak level of the two drugs at four hours was 4 and 5 mg. per hundred cubic centimeters respectively. The rate of disappearance from the peritoneal cavity is much more rapid than that of sulfathiazole or sulfadiazine and resembles more closely the rate of disappearance of sulfanilamide. The temporary adhesions observed after the intraperitoneal implantation of sulfadiazine and sulfathiazole are not observed after the use of either drug. The drugs can be given intraperitoneally to dogs in a dose of at least 1 Gm. per kilogram of body weight without reaction. The authors have adopted a dose of 0.1 Gm. per kilogram of body weight for human beings, but in view of the low toxicity in animals it appears that the dose could be increased. The series treated by the authors is too small to allow comparison with a control series. Since both drugs are extremely effective in reducing the Escherichia coli count of the stool when given orally, it is reasonable to suppose that they could also be effective against the same organism occurring as a contaminant following intestinal resection. Since the blood level is slightly higher and more prolonged with phthalylsulfathiazole, this drug might be expected to be more effective than succinylsulfathiazole.

Arizona Medicine, Phoenix

3:201-268 (July) 1946

*Sudden Death in Obstetrics. H. W. Johnson.—p. 225.
Evaluation of Changes in Gangrene of Extremities. P. A. Wheeler and L. V. Mulligan.—p. 229.
Scalenus Anticus Syndrome. H. D. Cogswell.—p. 232.
Pediatric Parenteral Fluids. M. C. F. Semoff.—p. 237.
*Effect of Tobacco Smoke on Kahn and Hinton Reactions. E. L. Breazeale and C. W. Dunn.—p. 239.
Selling Medical Plans to Doctors. T. L. Williams.—p. 240.

Sudden Death in Obstetrics.—Sudden death in the obstetric patient is usually due to shock, hemorrhage or a combination of these two factors. Shock in the obstetric patient seems to be caused by (1) preeclampsia and eclampsia toxemia with or without the precipitating factors of anesthesia, surgery, trauma and blood loss, (2) dystoxia followed by exhaustion, dehydration, difficult forceps delivery and blood loss and (3) anaphylactoid reactions following blood transfusions and drugs. Johnson has seen fatal anaphylactoid reactions from intravenous injection of sulfanilamide, blood transfusion and in 2 cases in which ergotrate had been given. He has seen profound shock follow the administration of 1 minim of pitocin. Intradermal tests for sensitivity require only a few minutes and would avoid such grave complications. Recently 100 intradermal tests with ergotrate have been made while the patients were on the delivery table. There were 98 negative, but 2 positive reactions. Fatal hemorrhage may be brought on by postpartum hemorrhage from such causes as uterine atony, extensive cervical lacerations and ectopic pregnancy. The author adds to this group spontaneous separation or manual removal of the placenta in abdominal pregnancies and manipulated placenta previas. Shock from hemorrhage may cause death, but it is relatively infrequent when uncombined with the other causes of obstetric shock.

Effect of Tobacco Smoke on Kahn and Hinton Reactions.—Breazeale and Dunn carried out experiments to test the effect of tobacco smoke on the Kahn and Hinton reactions. Serums were drawn for routine examination by the methods of Kahn and Hinton. Control tests were made in a room free from chemical fumes. The serum remaining after running the control test were then divided into two portions. The first portion was subjected to cigar smoke for a period of thirty minutes and then the standard Kahn and Hinton tests were run in an atmosphere of cigar smoke. The second portion was run only in the atmosphere of smoke without previous exposure. It was found that exposure to tobacco smoke increases the "titer" on serum from 1 to 3 points. On visual reading the serums exposed to smoke were more strongly positive than were the controlled serums. Serums that were exposed to smoke before and during the examination gave a more strongly positive reaction than did serums exposed to smoke only during the actual performance for the test itself. The authors conclude that tobacco smoke in sufficient concentrations will influence the accuracy of the various serologic tests for syphilis.

Endocrinology, Springfield, Ill.

39:1-84 (July) 1946

Quantitative Effects of Hypophysectomy on Testis and Prostate of Dogs. C. Huggins and P. S. Russell.—p. 1.

Method for Locating Radioactive Elements in Tissues by Covering Histologic Sections with Photographic Emulsion. L. F. Bélanger and C. P. Leblond.—p. 8.

Effect of Thiouracil on Juvenile Plumages of Brown Leghorn Fowl. Mary Juhn.—p. 14.

Pituitary Gonad Interaction in Immature Female Parabiotic Rats. R. K. Meyer, C. Biddulph and J. C. Finerty.—p. 23.

Effect of Adrenocorticotrophic Hormone on Urinary Excretion of Sodium, Chloride, Potassium, Nitrogen and Glucose in Normal Rats. D. J. Ingle, C. Hao Li and H. M. Evans.—p. 32.

Production of Alimentary Glycosuria by Forced Feeding in Rat. D. J. *Ingle.—p. 43.*

Comparison of Acute Effects of Corticosterone and 17-Hydroxycorticosterone on Body Weight and Urinary Excretion of Sodium, Chloride, Potassium, Nitrogen and Glucose in Normal Rat. D. J. Ingle, Ruth Sheppard, Elizabeth A. Oberle and M. H. Kuizenga.—p. 52.

Illinois Medical Journal, Chicago

90:1-72 (July) 1946

Infectious Diarrhea of the Newborn. Henrietta Herbolsheimer.—p. 6.

House of Delegates, Illinois State Medical Society.—p. 10.

Journal of Clinical Endocrinology, Springfield, Ill.

6:483-534 (July) 1946

Studies Concerning Cause and Purpose of Menstruation. O. W. Smith and G. V. S. Smith.—p. 483.

Chronic Idiopathic Hypoparathyroidism with Superimposed Addison's Disease in Child. Martha F. Leonard.—p. 493.

Adrenocortical Cancer with Undulating Fever in Addison's Disease. A. P. Cawadias.—p. 507.

Journal of Infectious Diseases, Chicago

79:1-100 (July-Aug.) 1946

Infections with Plasmodium Gallinaceum in Chick Embryos Induced by Exoerythrocytic and Blood Stages. A. Zuckerman.—p. 1.

Studies with Coccidioides Immitis: I. Submerged Growth in Liquid Mediums. W. G. Roessler, E. J. Herbst, W. G. McCullough, R. C. Mills and C. R. Brewer.—p. 12.

Id.: II. In Vitro Effects of Streptothricin and Streptomycin. W. G. Roessler, E. J. Herbst, W. G. McCullough, R. C. Mills and C. R. *Brewer.—p. 23.*

Storage of Mouse Adapted Strains of Poliomyelitis Virus and of Japanese B Encephalitis Virus at Subfreezing Temperatures. J. L. Melnick. —p. 27.

*Problem of Dangerous Carrier of Hemolytic Streptococci: IV. Observations on Role of Hands, of Blowing the Nose, of Sneezing and of Coughing in Dispersal of These Micro-Organisms. M. Hamburger Jr. and Margaret J. Green.—p. 33.

Fungicidal Action of Triethylene Glycol. Margaret Mellody and E. Bigg. —p. 45.

*Outbreak of Gastroenteritis Presumably Caused by Salmonella Pullorum. R. B. Mitchell, F. C. Garlock and R. H. Broh-Kahn.—p. 57.

Effect of Time of Contact at 37 C. and Hydrogen Ion Concentration on Degree of Neutralization of Equine Encephalomyelitis Virus (Eastern Type) by Immune Serum. N. A. Labzoffsky.—p. 63.

Hemolytic Corynebacterium Resembling Corynebacterium Ovis and Corynebacterium Pyogenes in Man. P. D. MacLean, A. A. Liebow and A. A. Rosenberg.—p. 69.

Salmonella Types of Pacific Area. R. B. Lindberg and M. Bayliss. —p. 91.

Rapid Agglutination Test as Possible Aid in Laboratory Diagnosis of Ornithosis. N. A. Labzoffsky.—p. 96.

Carrier of Hemolytic Streptococci.—The number of beta hemolytic streptococci captured by sterile handkerchiefs after blowing the nose, sneezing and coughing was compared by Hamburger and Green in carriers exhibiting positive nose and throat cultures and those with positive throat but negative nose cultures. Sneezing, coughing and forcible breathing on blood agar plates were also investigated. Millions of hemolytic streptococci were frequently expelled during a single noseblow by carriers with positive nose cultures. Extensive contamination of the hands by these bacteria was found in carriers exhibiting positive nose cultures but very little of the hands of carriers with positive throat but negative nose cultures. Gross contamination of the hands may occur instantaneously during a single noseblow. Relatively few hemolytic streptococci were expelled by coughing. Variable numbers were expelled by induced sneezing. Nine out of 10 throat carriers with negative nose cultures expelled very few streptococci by sneezing. Carriers with positive nose cultures, however, were sometimes capable of sneezing out great numbers, though the experiments suggest that most of the streptococci were contained in nasal secretion which would not be finely atomized or propelled very far from the sneezer. It is concluded that blowing the nose is the most important of the respiratory activities which result in the dissemination of hemolytic streptococci under epidemic conditions.

Gastroenteritis from Salmonella Pullorum.—According to Mitchell and his associates Salmonella pullorum is a common cause of disease in chickens and is known to be present in the eggs of infected fowls and accordingly may be found in food products. This micro-organism is thought not to be concerned with human disease and is usually described as nonpathogenic for man. Recently the Army Air Forces Central Diarrheal Disease Control Laboratory of the Army Air Forces School of Aviation Medicine investigated an extensive outbreak of gastroenteritis among personnel at an army air base. The evidence obtained indicated that this outbreak could be attributed to the ingestion of food prepared from uncooked eggs and that Salmonella pullorum was prominently associated with the epidemic. The outbreak of gastroenteritis involved a total of 423 persons who required medical treatment. Of this number 172 required hospitalization. The source of the infection could be traced to rice pudding containing eggs served at three successive meals. This rice pudding formed the sole common link between all the patients. Salmonella pullorum was isolated from 11.7 per cent of the hospitalized patients, and this organism was believed to have been the probable cause of the infections and to have been introduced into the rice pudding by infected eggs. This outbreak is the first reported large scale epidemic of human gastroenteritis associated with S. pullorum. Uncooked eggs and egg products infected with S. pullorum constitute a potential source of outbreaks of human gastroenteritis.

Journal of International College of Surgeons, Chicago

9:419-510 (July-Aug.) 1946

Improvements in Single Stage Operation Without Colostomy for Cancer of Large Bowel. W. W. Babcock.—p. 419.

Carcinoma of Uterus: Question of Treatment by Surgery or Irradiation. D. O. Ferris.—p. 421.

Exomphalos. J. A. East.—p. 426.

Choice of Treatment for Carcinoma of Cervix Uteri. F. Gentil.—p. 432.

Microscopically Verified Success of Pinch Homografting in Human Case. F. Mandl and N. Rabinovici.—p. 439.

Gas Gangrene: Bacteremia and Carbohydrogenic Toxemia. B. O. C. Pribram.—p. 447.

J. Neuropathology and Exper. Neurology, Baltimore

5:169-270 (July) 1946

Schizencephalies: Study of Congenital Clefts in Cerebral Mantle: II. Clefts with Hydrocephalus and Lips Separated. P. I. Yakovlev. —p. 169.

Motor Cortex in Amyotonia Congenita. W. Freeman.—p. 207.

Subarachnoid and Ventricular Implants in Ependymal and Other Gliomas. I. M. Tarlov and L. M. Davidoff.—p. 213.

Cortical Anomaly with Some Porencephalic Features. C. Davison and A. P. Friedman.—p. 225.

Circumscribed Arachnoidal Sarcoma of Cerebellum: Case. K. T. Neubuerger and L. W. Greene Jr.—p. 233.

Complete and Permanent Elimination of Hypothalamic Thermogenic Mechanism Without Affecting Adequacy of Heat Loss Mechanism. J. R. Blair and A. D. Keller.—p. 240.

Porencephaly: Clinicopathologic Study. R. Cohn and M. A. Neumann. —p. 257.

Journal of Pediatrics, St. Louis

29:129-268 (Aug.) 1946

Mumps: Technics of Laboratory Diagnosis, Tests for Susceptibility and Experiments on Specific Prophylaxis. J. F. Enders.—p. 129.

*Juvenile Rheumatoid Arthritis: Study of 56 Cases, with Note on Skeletal Changes. J. A. Coss and R. H. Boots.—p. 143.

Epidemiologic Studies in Dental Caries. I. Pattern of Dental Caries in Iowa City Children. J. D. Boyd and V. D. Cheyne.—p. 157.

Influence of Human Serum Albumin on Edema in Erythroblastosis Fetalis. M. Jacobi, A. Litvak and S. Gruber.—p. 177.

Diagnosis and Management of Severe Infections in Infants and Children: Review of Experiences Since Introduction of Sulfonamide Therapy: VI. Acute Iliac Lymphadenitis. M. J. Carson and Alexis F. Hartmann.—p. 183.

Treatment of Scabies in Children with New Sarcopticide. T. J. McElhenney.—p. 189.

Streptomycin in Pediatrics. Hattie E. Alexander.—p. 192.

Salmonella Anatum Infection. P. J. Almaden and J. Wahlin.—p. 199.

Treatment of Epidemic Diarrhea of the Newborn. M. J. Glynn.—p. 205.

Behavior Aspects of Care of Premature Infant. A. Gesell.—p. 210.

Congenital Adrenal Cortical Insufficiency Associated with Macrogenitosomia: Follow Up and Terminal Report. H. E. Thelander.—p. 213.

Congenital Aortic Atresia. N. H. Isaacson, S. D. Spatt and D. M. Grayzel.—p. 222.

Foreign Body in Duodenum Causing Urinary Disturbance. E. T. McEnery and P. F. Fox.—p. 226.

Malignancy of Genitourinary Tract in Children: Report of Case of Sarcoma of Vulva. A. C. Service and R. C. Derbyshire.—p. 228.

Juvenile Rheumatoid Arthritis.—Since the organization of an arthritis clinic at Columbia Presbyterian Medical Center in 1928, Coss and Boots have observed 56 cases of rheumatoid arthritis in children. This group includes cases in which the onset was at 12 years of age or earlier and represents 4.9 per cent of all cases of rheumatoid arthritis. The authors have not used the term Still's disease, since Still's disease suggests a distinction between conditions the differences in which are not related to the nature of the disease process but to the reaction of the body against that process as it varies in different age groups. The presence of splenomegaly, hepatomegaly or generalized glandular enlargement is not a necessary part of the diagnosis of juvenile rheumatoid arthritis, although it is more frequent than in adult arthritis. Cardiac changes were seen in some of the patients and, if the arthritis had disappeared early with no residuum, one would be inclined to classify them as rheumatic fever. The authors found that gold therapy is no more dangerous in children than in adults. Roentgenographic comparisons of the various forms of arthritis indicate four criteria as most characteristic of juvenile rheumatoid arthritis: decalcification, bone destruction, joint space narrowing and soft tissue changes. Roentgenologic studies were available in 47 of the 56 patients with at least one of the criteria present in all. Unusual skeletal changes resulting directly from early rheumatoid arthritis usually occur when the disease begins before the second dentition and in the first three years of life.

Journal of Pharmacology & Exper. Therap., Baltimore

87:329-456 (Aug.) 1946 **Partial Index**

Fate of Acetylsalicylic Acid. D. Lester, G. Lolli and L. A. Greenberg.—p. 329.

Changes in Leukocyte Picture in Experimental Trypanosomiasis by Administration of Neostibosan and Neostam. O. Ikejiani and L. S. Mautner.—p. 343.

*Protective Action of Quinacrine Against Chloroform Adrenalin Ventricular Fibrillation. K. I. Melville.—p. 350.

Blood Plasma Quinacrine Levels Obtained with Suppressive and Therapeutic Doses of Quinacrine Dihydrochloride. P. K. Smith, Barbara N. Gallup and L. J. Cain.—p. 360.

Lethal Dose and Average Rate of Uptake of G Strophanthin in Heart Lung Preparation of Dog Under Varying Conditions. A. Farah.—p. 364.

Relationship Between Lipoid Affinity and Insecticidal Action of 1, 1 bis (p Fluorophenyl) 2,2,2 Trichloroethane and Related Substances. S. Kirkwood and P. H. Phillips.—p. 375.

Action of Alloxan, Senecionine, Sulfadiazine and Thiouracil in Hamster. P. N. Harris, R. C. Anderson and K. K. Chen.—p. 382.

Metabolic Studies on Beta Cyclohexylethylamines. F. H. Snyder and F. W. Oberst.—p. 389.

Response of Intestine to Smooth Muscle Stimulants. G. L. Canton and G. Eastman.—p. 392.

General Systemic Actions of Di Isopropyl Fluorophosphate (DFP) in Cats. W. Modell, S. Krop, P. Hitchcock and W. F. Riker.—p. 400.

Action of Quinacrine on Ventricular Fibrillation.—Melville observed that intravenous injections of quinacrine hydrochloride can prevent the development of ventricular fibrillation following injection of epinephrine during chloroform administration in dogs anesthetized with pentobarbital. This protective action of quinacrine is also demonstrable after atropinization or vagotomy. Electrocardiograms taken during the rise in blood pressure following injection of epinephrine in the pentobarbitalized dog show characteristic early diphasic alterations in both P and T waves. These alterations are accentuated if chloroform is being administered but under similar conditions are antagonized by quinacrine. It is suggested that this protective action of quinacrine is primarily a coronary phenomenon. Thus quinacrine (a coronary dilator agent) might offset either an initial reduction in coronary blood flow or some impairment in myocardial nutrition induced by epinephrine under the conditions described.

Journal of Thoracic Surgery, St. Louis

15:227-296 (Aug.) 1946

Technic for Segmental Pulmonary Resection, with Particular Reference to Lingulectomy. O. T. Clagett and R. A. Deterling Jr.—p. 227.

*Pneumothorax Therapy for Early Bronchiectasis, with Report of Cases. H. Hennell.—p. 239.

Solitary Primary Neurogenic Tumor of Lung: Report of a Case. J. P. Bartlett and W. E. Adams.—p. 251.

Report of Clinical Trial of Oxidized Gauze in Seven Thoracoplasties. R. A. S. Cory.—p. 261.

Partial Claviculectomy as Adjunct to Surgical Collapse of Chest Wall. A. Lambert.—p. 266.

Mucocellular Papillary Adenocarcinoma of Lung and Lobectomy. K. E. Osserman and H. Neuhof.—p. 272.

Fate of Distal Esophageal Segment Following Indirect Surgical Treatment of Congenital Tracheoesophageal Fistula. W. P. Longmire Jr.—p. 279.

Intrathoracic Goiter: Report of Patient Operated on Through Thorax. H. G. Hollenberg.—p. 283.

Esophagotracheal Fistula Due to Nonpenetrating Crushing Injury. H. D. Adams and R. E. Mabley.—p. 290.

Pneumothorax for Early Bronchiectasis.—Hennell suggests as objectives in the treatment of bronchiectasis (1) diminution of the trauma of respiration by decreasing its force or by eliminating it entirely in the diseased portion of the lung; (2) decrease in or elimination of the trauma of cough; (3) counteraction of the increased pull on the diseased bronchi because of a lowered intrapleural pressure incidental to atelectasis or fibrosis of the pulmonary parenchyma; (4) elimination of the infection in the lung and bronchi. All patients were successfully treated by the induction of a low tension pneumothorax. There was a selective collapse of the involved portion of the lung, the highly negative intrapleural pressure was brought to an approximately normal level; the cough promptly decreased and then disappeared within one to four weeks; infection subsided promptly and permanently. Pneumothorax therapy should receive first consideration in cases of early bronchiectasis. If judiciously employed, pneumothorax has no mortality, no morbidity and no serious complications. The use of pneumothorax does not preclude the subsequent employment of radical surgical therapy if the pneumothorax is relinquished when success is not achieved in a reasonably short time.

New England Journal of Medicine, Boston

235:239-284 (Aug. 22) 1946

Acute Generalized Miliary Tuberculosis in Adults: Clinicopathologic Study Based on 63 Cases Diagnosed at Autopsy. C. B. Chapman and C. M. Whorton.—p. 239.

Late Results of Femoral Thrombophlebitis and Their Treatment. J. Homans.—p. 249.

*Dextrocardia and Bronchiectasis: Review of Literature and Report of 2 Cases. A. H. Russakoff and H. W. Katz.—p. 253.

Active Immunization. G. Edsall.—p. 256.

Tuberculosis of Bronchus.—p. 275.

Abdominal Pregnancy.—p. 277.

Dextrocardia and Bronchiectasis.—Russakoff and Katz report 2 instances of dextrocardia and bronchiectasis and present evidence that transposition of the viscera is attended by a high incidence of other abnormalities. In reviewing the files of the Mayo Clinic from 1920 through 1941 Olsen found 85 cases of dextrocardia. Of these, 14 were discovered to have an associated bronchiectasis, an incidence of 16 per cent. During this identical period a diagnosis of bronchiectasis was made on less than 0.5 per cent of all other patients investigated. The authors consider that the coincidence of bronchiectasis with visceral transposition is unusually high. They think that this puts physicians under obligation to adopt a somewhat different attitude toward cases of dextrocardia. It is no longer sufficient to inform the patient of transposition of the abdominal viscera in cases of situs inversus to avert the catastrophes of improperly interpreted contralateral abdominal manifestations Besides a search for other anomalies, a thorough investigation of the upper respiratory system and the bronchopulmonary tree should be an integral part of a complete clinical study.

New York State Journal of Medicine, New York

46:1759-1870 (Aug. 15) 1946

Clinical Comparison of Cardiac Glycosides. A C. DeGraff —p 1803
Primary Atypical Pneumonia. F L Horsfall Jr.—p. 1810
Endocrine Features and Treatment of Chronic Cystic Mastitis and Their Relation to Infertility. J. H. Morton —p 1815.
Practical Considerations in Conservative Treatment of Thrombophlebitis I S. Wright —p 1819.
Surgical Management of Thrombosis and Thrombophlebitis, with Discussion of Vein Resection G. H Pratt.—p. 1825.

46:1871-1982 (Sept. 1) 1946

Evaluation of Cardiac Patients for Surgery. D Scherf —p. 1915
Pentothal Time Quotient Instructional Aid R N. Terry —p. 1920
Factors Involved in Choice of Premedication for Anesthesia M. Lenahan —p 1924
Analysis of Maternal Deaths for Twelve Years in Monroe County, Including Rochester. J. K Quigley —p 1929.

Northwest Medicine, Seattle

45:541-624 (Aug.) 1946

Surgical Management of Acute Massive Hemorrhage from Peptic Ulcer C Mathewson Jr and R. D Pinkham —p 563
Vascular Complications Pulmonary Embolism C B Ritchie —p 567
Biochemic Imbalance in Surgery J. W. Read.—p. 571.

45:625-704 (Sept) 1946

Treatment of Subacute Bacterial Endocarditis with Penicillin· Report of 3 Cases. R L King and R. J. Evoy.—p 653.
Penicillin in Hordeolosis A. DeRoetth.—p 658
*Salmonella Fever Report of 5 Cases, 1 Complicated by Cholecystitis, Perforation and Peritonitis with Autopsy Findings C. E. Bender —p 660
Thrombus in Femoral Vein from Great Saphenous Vein M. S. Rosenblatt —p. 665
*Rabies in Washington State H H Kretzler.—p 666

Salmonella Fever.—Bender reports 5 cases belonging to that group of salmonella infections usually classified as enteric fever or salmonella fever seen in an overseas hospital on Luzon, P I. The epidemiologic aspects appear to be about the same as those observed in typhoid Salmonella paratyphi A, the etiologic agent in the first 3 cases, is closely related to Salmonella typhi (Eberthella typhosa) both in pathogenicity and in natural distribution. The clinical picture is so similar to typhoid that only a bacteriologic diagnosis can differentiate the two In the fourth case Salmonella enteritidis was demonstrated and in the fifth case blood cultures were positive for group C Salmonella, type undetermined. Positive blood cultures were obtained in all 5 cases. The vagaries of the infection are illustrated, oscillating from a severe systemic infection with pulmonary involvement, cholecystitis and subsequent perforation of the gallbladder to a moderate febrile course with only malaise and headaches. The diagnosis of sporadic cases of salmonella fever necessitates constant awareness of the process with subsequent demonstration of the organisms in the blood, feces or urine While recognition of the basic etiology will affect the treatment but little, it may prevent unnecessary surgical intervention and is important from the standpoint of isolation precautions

Rabies in Washington State.—Kretzler reports 8 cases of human rabies that have occurred in the state of Washington. The Pasteur treatment is not wholly devoid of danger. With present laboratory methods the danger of contracting rabies from the vaccine is remote but is always present. Figures regarding the incidence of this complication vary greatly. Of the 8 cases reported here paralysis developed in 3. Recovery occurred in 2 of these without residual paralysis, but the third patient still had much spasticity of the lower extremities two years after onset and still needed crutches or braces to enable him to walk. Age seems to be one of the factors that influences the likelihood of paralysis, as it is rarely seen in children. The more intense the treatment, the more likely is the development of paralysis. Vaccination with the dried cord, the original Pasteur method, results in the greatest incidence of paralysis. The cerebral substance of the rabid animal rather than the cord substance was held by some to be responsible for the complication.

Philippine Medical Association Journal, Manila

22:145-188 (April) 1946

Observations and Problems in Tuberculosis in City of Manila Before, During and After the Japanese Occupation. S. A. Francisco and C Ongpin —p 145.
*Cancrum Oris Observations on Its Incidence and Treatment. A. V. Tupas and A. P. Jongco —p 153.
Practical Considerations in Refraction. F. Nicolas Fernando —p. 159.
Modified Field Stain for Rapid Staining of Thick and Thin Blood Smears T. P. Pesigan and E. Y. Garcia —p 165.

Cancrum Oris—Tupas and Jongco say that cancrum oris, also known as noma or gangrenous stomatitis, showed a rise in frequency during the later years of the Japanese occupation and decreased again in 1946. They think that this can be attributed to the scarcity of food and to poor hygienic and living conditions prevailing during the period of occupation. They review observations on 15 cases of cancrum oris seen in the course of one year. Only 2 of the patients died. This mortality rate of less than 14 per cent is a great improvement over mortality rates of from 70 to 100 per cent given in the earlier reports The author ascribes these favorable results to the combined use of sulfonamides and penicillin. The mouth was first cleansed with an antiseptic solution, usually dilute potassium permanganate; sulfathiazole or sulfadiazine powder was applied locally to the lesions. In addition, 8 patients received either sulfathiazole or sulfadiazine by mouth. Seven patients were given sulfathiazole or sulfadiazine by mouth and penicillin intramuscularly. The dose of penicillin varied from 100,000 to 250,000 units daily. All of the 7 patients who received sulfonamides and penicillin recovered.

Psychosomatic Medicine, Baltimore

8:227-292 (July-Aug.) 1946

Studies on Headache· Mechanisms of Chronic Posttraumatic Headache. D. J. Simons and H. G. Wolff.—p. 227.
New Psychiatric Rating Scale. W. Malamud, H. Hoagland and I. C. Kaufman.—p. 243.
Changes in Electroencephalogram and in Excretion of 17-Ketosteroids Accompanying Electroshock Therapy of Agitated Depression. H. Hoagland, W. Malamud, I. Kaufman and G. Pincus —p 246.
Concept of Disease. C. A. Seguin.—p. 252.
Analysis of Neuroses Developing After Combat in 4 Individuals with Outstanding Combat Records. S. P. Hunt.—p. 258.

Review of Gastroenterology, New York

13:267-346 (July-Aug.) 1946

Dietotherapy in Gastrointestinal Diseases. E. Foldes —p. 283.
Diverticulitis of Colon. L. C. Sanders.—p. 294
*Gastrointestinal Disorders Associated with or Simulated by Lesions of Genitourinary Tract. P. W. Aschner.—p. 298.
Preoperative Management of Segmental Enteritis. H. A. Monat.—p. 302.
Influence of Hyperthyroidism and Hypothyroidism in Clinical and Secretory Functions of Gastric Juice. M. Allende.—p. 303.
*Fluorescein—Aid in Gastroscopy. H. M. Robinson.—p. 303.

Fluorescein in Gastroscopy.—Robinson used fluorescein in outlining ulcers of the gastric mucosa which otherwise might be overlooked or might appear indefinite on gastroscopy. The Schindler procedure was unaltered except that 10 cc. of the fluorescein was permitted to enter the stomach through the Ewald tube after the gastric contents had been drained The gastroscope was then inserted and the stomach inspected in the usual manner The author presents the history of 4 cases which are representative of 22 in which this method was used Fluorescein aids in outlining and demonstrating the ulcer and thus makes possible a more accurate estimate of the diameter of the ulceration.

Rocky Mountain Medical Journal, Denver

43:609-696 (Aug.) 1946

What We Expect from the American Medical Association and Its Council on Medical Service and Public Relations. B. Murphey.—p. 627.
Amebiasis. R. W. Mendelson —p 630.
Reconstruction of Shoulder. E. Parnall —p. 635.
Delayed Rupture of Spleen. J. E. A. Connell.—p. 637.
Coccidioidal Meningitis. J. Dancis and J. C. Nunemaker.—p. 639.
Experimental Electroshock Seizures. J. E. P. Toman and E. A. Swinyard.—p. 642.
Effect of Stilbestrol on Testis and Breast of Patients Treated for Carcinoma of Prostate Gl

United States Naval Med. Bulletin, Washington, D. C.

46:1349-1492 (Sept) 1946

Pattern of Injuries Produced by Atomic Bombs at Hiroshima and Nagasaki. S Warren and R H Draeger—p. 1349
Diagnosis and Treatment of Localized Infections in Hand W. H. Requarth—p 1354.
Role of Psychiatrist in Naval Disciplinary Barracks. G E Gardner.—p 1368
Condition Simulating Appendicitis Following Cholera Vaccine Inoculation L. K Woodward—p. 1377.
Eye Injuries in Amphibious Warfare S S McNair—p. 1379
X-Ray Darkroom Training as Adjunct to Rehabilitation of Blind R G Gerry and Faith C. Koch—p 1382
Mobile Surgical Unit in Combat Area W. L Mersheimer, R G. Allen, J. W. Stutzman, W. E. George and R. R Schubert—p 1389.
Isolation and Identification of Enteric Pathogens at Naval Base in North Africa. E. A Fullgrabe and F. A. Levant—p 1398
Value of Social Service History in Detection of Those Psychiatrically Unsuited for Military Service: Study of 500 Enlisted Men O A. Will Jr—p 1403
Cancer Problem in Navy. J. H Farrow—p 1408
Sulfadiazine and Penicillin in Treatment of Scarlet Fever S Candel and W. B. *Burwell—p. 1423.*
Penicillin Sterile Empyema A B. McGraw and H C Jackson—p 1429.
Treatment of Impetigo at Tropical Base W. B Brett—p 1439.
Pilot Staleness Marion M. Kalez and R C. Hovde—p 1441
Surgical Technic for Facial Lacerations K M Vander Velde—p 1451.
Notes on Biopsy, with Special Reference to Its Use and Misuse D A. Wood and S F Thomas.—p. 1453.

West Virginia Medical Journal, Charleston

42:195-216 (Aug) 1946

*Anemias Associated with Nutritional Disorders C. F. Vilter and T. D. *Spies—p. 195.*
Twins, One Macerated, Retained, the Other, Normal Delivery at Term: Case A. P. Hudgins—p 200.
Role of General Practitioner in Tuberculosis Control R. L. Smith. *—p. 201.*
Intracerebral Concussion Hemorrhages: Report of Case with Autopsy. J. F Carr and S Werthammer.—p. 205
Surgical Approach to Posterosuperior Mediastinum J. S Gaynor and J. R. Caldwell—p 208.

42:217-240 (Sept.) 1946

Place of Penicillin in Treatment of Syphilis W. M Sheppe—p. 217.
Evolution of Art of Medicine J M. Hutcheson—p 224
Abnormal Physiology of Congestive Heart Failure. R. M Sonneborn. —p 229.

Anemias Associated with Nutritional Disorders.—All morphologic types of anemia are found in patients with nutritive failure Some of these result from an inadequate intake in specific nutrients A deficiency in extrinsic factor results in macrocytic anemia, of iron in microcytic anemia, and occasionally of ascorbic acid or other factors in normocytic anemia Among patients with microcytic anemia Vilter and Spies detected a considerable number, all female, who seemed to have the Plummer-Vinson syndrome, or sideropenic dysphagia These patients, in addition to evident pallor, complained of burning of the tongue and difficulty in swallowing. Some had been grinding their food for years The tongue usually showed atrophy of the papillae and appeared smooth, pale and glistening. Sometimes there was an associated cheilosis or angular stomatitis Anorexia, flatulence and constipation were usual Spoon nails were occasionally observed and also a spotty but coalescent brown pigmentation over the face. Fluoroscopic studies of the upper part of the esophagus frequently revealed a semilunar membrane partially obstructing the lumen and an adjacent narrowing of the esophagus. Hypochlorhydria was usual in patients with anemia and dysphagia. There are two theories about this syndrome On the one hand the dysphagia can so alter the dietary that there is iron deficiency and anemia develops; on the other, it is possible that the alterations in the esophagus are secondary to the anemia or the iron deficiency. Iron alone is effective in this microcytic, hypochromic anemia Liver factor deficiency (macrocytic anemia) may be treated with liver extract or synthetic folic acid, iron deficiency with ferrous compounds and the anemia of scurvy with ascorbic acid Therapeutic combinations of these specific substances for the treatment of anemias are economically wasteful and have been used only as the result of misconceived advertising and indifference in diagnosis.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Journal of Pathology and Bacteriology, Edinburgh

58:157-324 (April) 1946 Partial Index

*Syndrome of Leukanemia Report of Case H. Foy, A. Kondi and J F Murray.—p 157.
Relative Susceptibility to Phagocytosis of Gravis and Mitis Types of Corynebacterium Diphtheriae. Jean Orr Ewing.—p 167.
Relapsing Febrile Nodular Inflammation of Adipose Tissue (Weber-Christian Syndrome). Report of Case with Autopsy. H. Ungar —p 175
Substance in Human Serum Inhibiting Staphylocoagulase. I. Lominski and G B S Roberts—p 187.
*Thrombosis as Factor in Pathogenesis of Coronary Atherosclerosis J. B Duguid.—p 207.
Experimental Study of Some Effects of Acute Anhydremia. G R Cameron, F Burgess and V. Trenwith—p. 213
ABO Blood Groups in United Kingdom: Frequencies Based on Very Large Sample Aileen M. Dobson and Elizabeth W. Ikin.—p 221.
Collagenase (κ Toxin) of Clostridium Welchi Type A C. L Oakley, G. Harriet Warrack and W. E. van Heyningen—p 229.
Laboratory Findings in Clinical Dysentery in Middle East Force Between August 1940 and June 1943 J S K. Boyd—p. 237.
Two Cases of Multiple Myeloma (Plasmocytoma) with Secondary Deposits in Dura Mater. Elizabeth Armstrong, J. S. Faulds and M. J. Stewart—p 243.
Skin and Nose Carriage of Bacteriophage Types of Staphylococcus Aureus R E O. Williams—p. 259
Frequencies of Bacterial Subtypes in Carrier Community and Their Significance. A A. Miles—p 269

Leukanemia.—Foy and his associates report the occurrence in a woman aged 24 of a condition which corresponds to Leube's original description of the syndrome of leukanemia and which raises questions relating to the maturation of the erythroid and myeloid cells Hematologic, clinical and postmortem aspects are described in detail The disorder commenced as a typical macrocytic anemia, with Ehrlich's megaloblasts and giant stab cells in the sternal marrow Free acid was present in the gastric juice after histamine In the later stages of the disease the blood became leukemic, with 30,000 to 189,000 white cells, 80 to 90 per cent of which were myeloblasts, some paramyeloblasts were present which are regarded as pathognomonic of the myeloblastic leukemias It is suggested that the red and white cell changes which occur in leukanemia are due to a maturation defect in the stem cell (hemocytoblast) which affects both the erythroid and the myeloid series, and that the defect may be due to the absence of some unknown factors necessary for the proper maturation of the hemocytoblast and the orderly formation and development of both red and white cells

Thrombosis and Atherosclerosis.—Duguid states that in his pathology classes sections of a thrombosed coronary artery were used to illustrate the process of canalization The artery, which had an organized thrombus with many channels running through it, provided a large number of sections, until a point was reached at which the formation changed Instead of many channels there was now a single lumen surrounded by a greatly thickened wall in which were foci of fatty degeneration The picture had changed from thrombosis to atherosclerosis. In order to see how this had come about, the sections were examined in serial order, whereupon it was found that the thrombosis was not limited to the region in which there was canalization but extended farther along the vessel in the form of a thick inner lining which, being organized and adherent, had the appearance of an intimal overgrowth Frozen sections from 26 cases of this condition showing organization of coronary thrombosis suggest that many of the lesions classified as atherosclerosis are arterial thrombi which, by the ordinary process of organization, have been transformed into fibrous thickenings. Red thrombi are prone to softening with fatty degeneration, and many of the "atheromatous" patches found in arterial thickenings appear to be the result of this process

Tubercle, London

27:105-126 (Aug.) 1946

Indolent Tuberculosis S R. Gloyne—p. 106.
Management of Pneumoperitoneum Therapy and Peritoneoscopy. F. S. Hawkins and G. O. Thomas—p 109.
National Scheme for Rehabilitation of the Tuberculous. F. R. G. Heaf, P. Edwards, J. B McDougall and A. C. Tibbits—p. 116.

Schweizerische medizinische Wochenschrift, Basel

76:551-574 (June 22) 1946

Success and Experience with 25 Cases of Phrenicotomy Combined with Pneumoperitoneum in Exudative Tuberculous Pleurisy R Rosenfeld —p 551
*Hepatodiaphragmatic Interposition of Colon (Chilaiditi Symptom) O Hubacher —p 554
Furan 2,5 Dicarbonic Acid, Additional Constituent of Human Urine B Cagianut —p 559
Treatment for Undescended Testis with Testosterone Propionate V. Kafka —p 561
Pediatric Experiences After Period of Siege and Hunger in Budapest S Hecht —p 563

Hepatodiaphragmatic Interposition of Colon.—Out of 20,000 roentgenoscopies in school children, army inductees and factory workers, Hubacher observed 17 patients (0 85 per thousand) with hepatodiaphragmatic interposition of the colon This condition was also observed in 5 of 5,000 cases (1 per thousand) in which chest roentgenograms were made Ten cases of hepatodiaphragmatic interposition of the colon were observed among 1,000 roentgenoscopies which were performed in infirmaries for the insane Reports of 22 additional cases in persons between the ages of 11 and 86 years are presented Hepatodiaphragmatic interposition of the colon occurs more frequently than would appear from the European literature Men are more frequently affected than women. In 21 of the 22 cases the condition was congenital and in only 1 case was it acquired In only a few cases the condition may be a sequel to a pathologic condition in the abdomen or thorax, but causal relationship between hepatodiaphragmatic interposition of the colon and other clinical symptoms, such as subileus, chronic constipation, upward displacement of diaphragm and transverse position of the heart is possible Diseases of the myocardium, of the coronary arteries and of the aorta, often associated with hepatodiaphragmatic interposition, may have some relationship to this condition Contrary to the statements in the literaure, posterior interposition of the colon was observed three times as often as the anterior interposition Chest roentgenoscopy is the diagnostic method of choice in cases of persistently displaced hepatic flexure and in cases with constant gas distention in the large intestine

Revista Clínica Española, Madrid

21:283-378 (May 31) 1946

*Lipemia in Psoriasis H J. Castro Mendoza and J Gomez Orbaneja —p 296
Action of Nicotinic Acid on Glycemia in Normal Persons and in Patients with Pellagra and Other Pathologic Conditions M. Diaz Rubio, E Monsalvez and J M Masaguer —p 299
Human Bronchopulmonary Nematodes and Clinical Aspects of Bronchopulmonary Nematodiasis C R Lopez Neyra and N. Gonzalez de Vega —p 304
Functional Exploration of Cardiocirculatory System in Patients with Pulmonary Tuberculosis: II Cardiocirculatory Changes in Patients with Pulmonary Tuberculosis Not Given Collapse Therapy J Mugica Echarte —p 313
Value of Histologic and Hormonal Method in Diagnosis of Malignant Mole and of Chorioepithelioma V. Beato —p. 322.

Lipemia in Psoriasis.—Castro-Mendoza and Gómez Orbaneja investigated the fat content of the blood of 36 patients with psoriasis In 33 of these patients they detected no changes in the total lipid content, in the total and free cholesterol or in the behavior of the cholinesterase of Sperry. The pathogenesis of psoriasis remains unexplained It cannot be attributed to disturbances of the fat metabolism reflected in the blood.

Revista de la San. Militar, Buenos Aires

45:551-678 (May) 1946 Partial Index

*Prevention of Shock by Vitamin C. Christiane C. D. Pasqualini —p 554.

Prevention of Shock by Vitamin C.—Pasqualini bled guinea pigs to the appearance of collapse. The blood was collected in a syringe containing heparin solution. As soon as collapse appeared, 25 per cent of the volume of blood was reinjected. Blood pressure rose for fifteen minutes and again fell. The remaining 75 per cent of heparinized blood was immediately reinjected. Blood pressure rapidly rose, but shortly after it fell and the animals died in about four hours The experiment was repeated in groups 2 and 3 of animals which were given prior to being bled an intraperitoneal injection of 200 mg of vitamin C (group 2) or an equivalent volume of isotonic solution of sodium chloride One out of 18 animals in the vitamin C experiment and 15 out of 17 controls died from hemorrhagic shock The animal which had vitamin C and died survived for twenty hours The controls died within a few hours The 17 survivors in the vitamin C group returned to normal health for an indefinite period

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

90:559-598 (June 1) 1946. Partial Index

Surgical Treatment of Open Ductus Arteriosus L. D. Eerland —p 560
*Influence of War Conditions on Incidence of Tuberculosis Caused by Bovine Tubercle Bacillus in Amsterdam A Charlotte Ruys —p 564
Liver Metabolism in Connection with Cancer Problem W. A. G. van Everdingen —p 567.
Diphtheric Stomatitis and Gingivitis in Infants G J van Lookeren Campagne —p 571.
Combined Penicillin and Sulfonamide Therapy in Pneumococcic Meningitis A van der Sar —p 572
Observations on Typhus Epidemic in 1945 F. L J Jordan and K. Hazenberg —p. 575
Kyphosis in Tetanus W. T Snoek and N Schulte —p 580.

Influence of War Conditions on Incidence of Tuberculosis.—Ruys says that before the war infection with the bovine type of tuberculosis was comparatively frequent even in the cities of the Netherlands. Investigations covering the period between 1933 and 1938 revealed that in cities with over 100,000 inhabitants bovine tuberculosis accounted for 9 per cent and other forms of tuberculosis for 21 per cent of the pulmonary disorders among children under 15 years of age. For adults the corresponding figures were 1 per cent and 20 per cent respectively. After 1940 the conditions changed. As nutrition became steadily poorer, tuberculosis increased in severity and extent. Isolation in sanatoriums became impossible in many cases of open tuberculosis, and chances of aerogenic infection with the human type of tubercle bacilli increased greatly. Since 1940 the milk in the large cities has been pasteurized chiefly to standardize the fat content, which has become steadily less, adults receiving only skim milk and finally no milk at all A table comparing the incidence of new cases of tuberculosis before and during the war in Amsterdam reveals a great increase among adults during the period of poor nutrition. However, a table listing the incidence of bovine and human infections in children before and during the war shows that whereas before the war the incidence of bovine tuberculosis was 9.6 per cent, during the war years it was only 1 8 per cent.

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Disturbances in Central Temperature Regulation. B. Brouwer.—p 681.
Hepatitis with Manifestations of Hepatic Cirrhosis in a Nursling A van Westrienen —p. 684.
Treatment of Pneumococcic Meningitis in Infants W. K. Dicke. —p. 687.
Bleeding from Nose, Mouth and Anus. J. C. Schippers —p. 688
Vis Medicatrix Naturae. G. J Huët —p 691.
Clinical Aspects of "Pancreatic Cirrhosis" in Infants. Ada Middelhoven —p. 693.
Brachyesophageal Diaphragmatic Hiatus Hernia. R. P. van de Kasteele. —p. 696.
*Familial Cirrhosis of Liver and Osteoporosis A. G. Schoo.—p 700
Gargoylism H. M. Brouwer Frommann —p 705.

Familial Cirrhosis of Liver and Osteoporosis.—Schoo observed a girl aged 6 years who had an enlarged liver and in whom biopsy indicated cirrhosis. She also had glycosuria, polydipsia and a skeletal disorder resembling rickets. For the last six months she exhibited pain to touch, and walking was impossible. Two sisters of this girl had died of a similar disorder, whereas a brother was healthy Gerstenberger in 1933 described the concurrence of hepatic cirrhosis and rickets in 3 children In the case of "rickets" that accompanies hepatic cirrhosis, vitamin D must be administered in large doses In the reported case some improvement was observed when an intramuscular injection of 600,000 international units was given Improvement progressed after a second and third injection of this dose. Pain in the legs persisted; the girl could sit but not stand; the weight decreased further, and it is likely that the general condition will deteriorate as the result of the hepatic cirrhosis

Book Notices

Job Placement of the Physically Handicapped. By Clark D. Bridges, Director of Conservation Services, Zurich Insurance Companies, Chicago. Cloth. Price, $3.50. Pp. 329, with illustrations. New York & London: McGraw-Hill Book Company, Inc., 1946.

This book appears to be a compilation of material from many sources (there are two pages of acknowledgments plus "many others who contributed"). Presentation of the material is brief, graphic and simple. The graphic display of job analysis and hazard is excellent. The simpleness of the anatomic and medical discussions is astounding; in fact it rivals the old time "doctor books" that were common during the last century. Surely employers who are intelligent enough to operate a large business successfully today can understand a more exact description of medical subjects. The oversimplification in this field is apt to mislead the uninformed reader; also the collection and presentation of this material are arranged for a person who has little or no background to understand the subject most similar to a primer designed for beginners. The placement considerations following the discussions of various diagnoses and material reprinted in appendixes will be of interest to physicians who are treating workers, but surely industrial physicians are already familiar with this material.

Prescribing Occupational Therapy. By William Rush Dunton, Jr., M.D. Second edition. Fabrikoid. Price, $2.50. Pp. 151. Springfield, Illinois: Charles C Thomas, 1945.

This edition continues to emphasize the value to patients of the effect of sedative work, assignments which need concentration and other general considerations. In fact the emphasis placed on these objectives leaves the reader uninformed about the strides that have been made since the first edition. In the chapter on the significance of occupational therapy a modern book should mention the use of this technic as an aid to diagnosis. Lately several reports have indicated that the occupational therapist can be used in diagnostic psychiatry as an aid in discovering the underlying cause for a particular individual's psychosis. Orthopedic surgery can use this "therapist" as an aid in diagnosing the present capacity of muscles and joints as well as prognostication based on response of injured parts to graded work load. Other examples of the diagnostic aids furnished by correct use of occupational therapy could be described, and these should be in the chapter on significance.

Specific improvements have also been made in the field of therapy of mental, orthopedic and convalescing patients, yet these are not mentioned in this portion of the book. In fact the broad principles formerly ascribed to occupational therapy could be undertaken by a poorly trained person. It is necessary to emphasize these newer developments to indicate that the modern occupational therapist needs adequate training before she is entrusted with these responsibilities.

If this edition is designed for physicians there is entirely too much elementary description and classification of mental and physical diseases. There is also a tendency to emphasize the mental conflicts associated with physical disease without equal stress being placed on specific prescriptions designed to cope with the physical handicap. If this book should be supplemented with newer knowledge of occupational therapy it might still be useful for beginning students.

Lectures on Preventive Medicine. By Harvey Sutton, O.B.E., M.D., D.P.H., Professor of Preventive Medicine, Director of School of Public Health and Tropical Medicine, University of Sydney, Sydney. Cloth. Price, 27 s. 6d. Pp. 658, with illustrations. Sydney: Consolidated Press, Ltd., 1944.

Easy informality combined with a scholarly presentation make these collected lectures interesting reading. The subject is considered under four main headings, the first of which is human life history. In this, eight chief subjects, including heredity and genetics, maternal and infant mortality, child welfare, industrial hygiene and personal and mental hygiene, are presented with numerous subheadings. In the next section environmental influences are discussed. Ventilation, heating, water, waste disposal and housing are considered, but the most interesting presentation is that under the heading of vitamins. This is a comprehensive discussion, giving in great detail all established facts regarding these elements. Proper balance is maintained by consideration of foods as the basic source of vitamins and emphasis on the importance of an adequate, well rounded diet. A lecture on alcohol states that "alcohol is a third-rate food, a second-rate drug and a first-rate poison," and this analysis is then discussed in detail. The third section, on communicable diseases, contains lectures dealing with avenues of infection, carriers, animal diseases, vectors, disinfection and infectious diseases. Following the fourth section, a brief consideration of public health administration, there is an appendix containing details on construction of a pedigree chart, vaccination against smallpox, tabular data of stages of growth including the now less widely used height-weight charts, and excellent material on milk and meat inspection. These lectures, though slanted somewhat for the Australian point of view, are of considerable general interest.

Growth and Development of the Young Child. By Winifred Rand, A.B., R.N., Mary E. Sweeny, A.M., M.S., and E. Lee Vincent, Ph.D. Fourth edition. Cloth. Price, $3. Pp. 481, with 63 illustrations. Philadelphia & London: W. B. Saunders Company, 1946.

With the publication of this edition the authors have brought their textbook well up to date and have done extremely well in orienting their book to modern ideas about child growth and development. While it emphasizes mental and emotional development rather than the purely physical, the book does contain excellent chapters on physical growth. Emphasis is placed on the preschool years rather than on infancy, although data on this period are included. In appraising the book, one is impressed with the fact that, while it is not the ultimate answer to our crying need for a standard textbook on human growth and development, it is as good an attempt at fulfilling such a need as has yet been published. No one or two or three people could possibily write a complete treatise on this all inclusive subject. The final answer must be a compilation of the work of many capable investigators, knit together by some experienced editor. The publisher has done a good job of printing. Illustrations are ample and there is a good index. A medical man reading this book will find many places where the information is perhaps not as complete as he would desire, but the information given is accurate. The average doctor will find also a wealth of material about which he is uninformed and which will be extremely practical to use in his daily contacts with parents and children. The bibliography is excellent and will assist him if he cares to delve deeper into subjects which are too superficially handled. The book should be useful in planning courses in growth and development for students and as a reference; but its greatest value will lie in its valiant attempt to relate the many facts of growth to the problems of actual living with children.

Music in Hospitals. By Willem van de Wall, Head, Adult Education Section, Education Branch, Internal Affairs and Communications Division Office of Military Government for Germany, U. S. Paper. Price, $1. Pp. 86, with 1 illustration. New York: Russell Sage Foundation, 1946.

Music in Medicine. By Sidney Licht, M.D. Cloth. Price, $3. Pp. 132. Boston, Massachusetts: New England Conservatory of Music, 1946.

Both these books on "music therapy" are apparently attempts to justify the use of music in the program of care of patients and to familiarize musicians with the organization developed for this purpose. One author has had considerable experience as an educator in the study of the psychology of music. The other is a physician who overlooked the only scientific article published on this subject by the American Medical Association.

Both booklets emphasize the necessity of having music prescribed by physicians who are responsible for the patient's care. Both fail to mention that it is only in the group of patients who remain in hospitals for long periods that there is even a chance for the functional use of music. General hospitals admit about 90 per cent of all patients, and the average stay for these patients in nonfederal general hospitals is only twelve days. Mental, tuberculous, cardiac and reconstructive orthopedic patients are hospitalized for longer periods, but general statements regarding music for these types of patients cannot give musicians or the public a clear understanding of the limitations of music for all types of patients. Little or no functional value of music can be expected for patients whose period of hospital stay is short, and therefore the only other value is diversional or for entertainment. It is unlikely that general hospitals will be interested in supplying personnel for the entertainment of their patients.

The functional approach of music should be under the direction of a qualified and experienced occupational therapist rather than musicians. It is only the adequately trained and experienced therapist who will have the proper knowledge of anatomy, physiology, psychiatry and psychology used in making music a functional type of treatment. Such a philosophy is implied by both authors but is not stated. Then, as music becomes a responsibility of the occupational therapist, she may request musicians to aid but never to assume control. Furthermore, music has for years been considered as an occupational therapy modality in both functional and diversional recreation. The functional use of music as an art or craft in occupational therapy has already received recognition by the American Medical Association in Music as a Modality of Occupational Therapy, by Arthur Fultz (*War Med.* **5**:193 [March] 1944).

Compulsion: The Key to Collectivism: A Treatise on and Evidence of Attempts to Foist on the American People Compulsory Health Insurance, and Explanation of the Implications Involved. Paper. Pp. 192, with illustrations. The National Physicians Committee for the Extension of Medical Service, Inc., 75 E. Wacker Drive, Chicago 1, 1946.

This study presents a readable and instructive account of the forces behind the agitation for a system of federally controlled compulsory sickness insurance in the United States and the technics employed by the agitators to gain their objective. Scattered throughout the pages of this brochure are pertinent excerpts from the testimony presented before the Senate Committee on Education and Labor in connection with the extended hearings on the Wagner-Murray-Dingell bill. Section B of the study is devoted exclusively to such testimony and to the ten point program of the American Medical Association. The chapter headings of section A are indicative of their contents: The Wagner-Murray-Dingell Bills and their Historical Background, the Bureaucratic Propaganda Front, Government Propaganda for Political Medicine, The Misused Draft Rejection Statistics, Organized Medicine's Efforts for Better Medical Care, The Why of Physician Opposition, Probing for Facts, An Elder Statesman Testifies, and Compulsion the Key to Collectivism. Every physician should possess and absorb the contents of this study.

Physicans' and Dentists' Assistants: The Outlook for Women in Occupations in the Medical and Other Health Services. United States Department of Labor, Women's Bureau, Bulletin 203, Number 11. Paper. Price, 10 cents. Pp. 15, with 4 illustrations. Washington, D. C.: Supt. of Doc., Government Printing Office, 1946.

Another excellent presentation of material for vocational guidance of women can be found in this pamphlet. This is the eleventh pamphlet in the series entitled "The Outlook for Women in Occupations in the Medical and Other Health Services." The entire series should be made part of the armamentarium of every vocational counselor. Mrs. Marguerite Zapoleon has followed an outline for this booklet similar to the arrangement of the preceding publications. Pertinent information is given, changes that have occurred as a result of the war are emphasized and an attempt is made to forecast some of the future developments. A practical approach is used by describing the earning power, hours of employment and the amount of advancement that can be expected. Appendix A, in each issue of the series, summarizes the important facts in tabular form.

Penicillin: Its Practical Application. Under the General Editorship of Professor Sir Alexander Fleming, M.B., B.S, F.R.C.P., Professor of Bacteriology in the University of London, St. Mary's Hospital, London. Cloth. Price, $7. Pp. 380, with 59 illustrations. Philadelphia: Blakiston Company, 1946.

This book, prepared under the editorship of Sir Alexander Fleming, is a comprehensive and authoritative compendium of our present knowledge of penicillin in all its aspects. Although the twenty-eight contributors are British, the American contributions to penicillin therapy are not slighted. The value of the book is enhanced because of its complete presentation of all the British work on this drug, much of which is not familiar to American physicians.

The first part of the book deals with the history, chemistry, manufacture, pharmacy, pharmacology and bacteriology of penicillin. These chapters are well written and of interest even to the general practitioner. The chapters on chemistry and pharmacology are particularly good, although the book was prepared before the recent information on the pharmacologic differences between the various penicillin fractions was available. The twenty-one chapters on the clinical use of penicillin are exceedingly well done and present a conservative point of view on the application of penicillin to a wide variety of bacterial infections commonly encountered in medical practice. The use of penicillin in the various medical and surgical specialties is presented authoritatively, and adjuvant medical and surgical treatment is stressed.

Only minor criticisms may be offered of this textbook. Mention is not made of the various chemical methods of penicillin assay which have been under study for the past two years. Although a comprehensive discussion of penicillinase is included, mention is not made of the use of this enzyme to distinguish between penicillin and nonspecific inhibitory substances in serum when one is performing assays on blood specimens. Considerable emphasis is given to pharmaceutic preparations of penicillin, particularly those for local application; this emphasis may lead the less informed physician to use local treatment where better results might be obtained from systemic therapy. The book is well illustrated in the first part, but greater use of illustrations could have been made in the section dealing with the clinical use of the drug. At the end of each chapter an excellent list of references is given, and the index at the end of the book is useful. In common with other British textbooks, the style of writing appears superior to the usual American book. This volume can be recommended to students, general practitioners and specialists without reservation.

The Vitamins in Medicine. By Franklin Bicknell, D.M., M.R.C.P., and Frederick Prescott, M.Sc., Ph.D. A.R.I.C., Clinical Research Director, the Wellcome Foundation, London. Second edition. Fabrikoid. Price, $12. Pp. 916, with 208 illustrations. New York: Grune and Stratton, 1946.

This book is a review and appraisal of our current knowledge of the vitamins, with correlation of their chemistry, physiology, nutritional importance and clinical uses. It may be considered as a source book in that it contains approximately 4,500 references to the literature, and the discussion is extensive and often detailed. Information of this type and scope presumably has not been collected previously in a single work. While the authors have attempted a critical evaluation of the literature, they themselves state that they cannot hope to have avoided errors of judgment in selection and interpretation of the literature. Though critical readers may expect to find a number of interpretations at variance with their own, the book nevertheless is worth while and should serve its purpose well. It should be valuable to any one with a scientific interest in the vitamins. It is profusely illustrated, and the illustrations are clear and well chosen. Comment on specific phases is not attempted because of the great variety and extensive ramifications of the subject matter.

The Chemical Composition of Foods. By R. A. McCance and E. M. Widdowson. Medical Research Council, Special Report Series No. 235. Second edition. Fabrikoid. Price, 6s. Pp. 156. London: His Majesty's Stationery Office, 1946.

New analytic data are in constant demand in the rapidly growing science of foods and nutrition. In order to provide investigators, particularly in Great Britain, with such material, analytic work has been sponsored by the council since 1925. In this book some new unpublished data have been added. Old data have been reappraised and revised or deleted as indicated by newer evidence. The present report is intended as a practical handbook which will be useful to investigators in the field. The book consists almost entirely of tables of chemical composition, but the text and bibliography are adequate to permit ready understanding and utilization of the tables. The type is large enough to be easily legible and accurately transcribed. The binding is of good quality.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

MARRIAGE AND EMPLOYMENT IN SERORESISTANT SYPHILIS

***To the Editor:*—A man aged 22 was rejected by the army four years ago because of a positive Kahn test (1 plus). His family physician also found a positive serologic test. The patient was hospitalized and given over 2 million units of penicillin, after which the blood Kahn test was still positive. Later he was given "eighty shots" weekly. The Kahn test remained positive. Spinal fluid examination revealed no central nervous system involvement. Serologic tests on other members of the family were negative. The patient does not give history of initial or secondary lesions and has always been in sound health. Because of state laws he is unable to obtain work or to be married because of the positive serologic test. What course should be taken in this case? Has he ever had syphilis? Should he receive further treatment of a more intensive nature? If he is "Wassermann Fast"—what can be done legally to clear him for work and marriage?** Andrew L. Laurie, M.D., Mount Dora, Fla.

ANSWER.—The interpretation of an unexpectedly positive blood serologic test found in the course of routine examination is always a matter of some difficulty. On the basis of general probability, syphilis is much more likely than a biologic false positive serologic test due to some other condition. In general it may be safely assumed that, excluding technical error (which is of course excluded in this case by virtue of the fact that the blood test has been repeatedly positive over a four year period), 95 to 98 per cent or more of all such positive tests are due to syphilis. In this case congenital syphilis seems to be ruled out by the negative examination of members of the family and by the probable absence of stigmas in the patient himself, who is said to be "in sound health."

The fact that the serologic test for syphilis has been positive for four years is strongly in favor of syphilis and strongly against a biologic false positive reaction. The false positive tests due to other conditions usually persist for only a short time. Some further information might have been gained if the tests had been quantitatively titered before any treatment was given since, by and large, false positive tests tend to be lower in titer as contrasted with those due to syphilis.

Has the patient in question ever had the opportunity to acquire syphilis by means of sexual exposure or kissing? Symptomless infection is of course common, either with the complete absence of primary or secondary lesions or with such trivial or insignificant lesions that they are overlooked or misinterpreted by the patient or his physician.

On the basis of the information given the patient may be regarded as having seroresistant latent syphilis and his future course should be guided by the discussion in Moore, J. E.: Seroresistance (Wassermann Fastness) in Syphilis: A Discussion for the Patient (*Am. J. Syph., Gonor. & Ven. Dis.* **30**:125 [March] 1946). The inquirer may obtain a reprint of this paper on request, and both he and the patient should read it.

The inquirer almost certainly misinterprets the state law. Neither in Florida nor in any other state in the Union does a positive blood test bar a person from employment or marriage. The premarital blood test laws provide only that a patient with infectious syphilis may not marry. This patient, with an infection of at least four years' duration and with treatment already amounting to a year and a half of metal chemotherapy plus a course of penicillin, is not infectious. A few unenlightened companies may refuse to employ seropositive persons, but this has nothing to do with the law, and the situation may usually be straightened out either as to marriage or as to employment by a letter from the physician to the appropriate authority describing the situation and certifying as to the patient's noninfectiousness and eligibility for marriage or employment. Legal steps are not necessary.

INFLUENZA VIRUS VACCINE

***To the Editor:*—Please discuss the effectiveness of influenza virus vaccine prepared by the calcium phosphate adsorption method and by the red cell elution method.** Robert J. Ralston, M.D., Holyoke, Colo.

ANSWER.—Influenza virus vaccine prepared by adsorption on calcium phosphate should be as effective as that prepared by the red cell elution method if the virus content and stability of the preparation are insured. There is insufficient evidence in the literature to warrant the assumption that there is an adjuvant effect in man.

TREATMENT OF CHARLEYHORSE

***To the Editor:*—1. What is the proper treatment for an ordinary charleyhorse or muscle cramp? 2. What is the physiologic explanation of a cramp? 3. Is massage contraindicated?** Harry W. Orris, M.D., Brooklyn.

ANSWER.—1. A charleyhorse is not a muscle cramp. The proper treatment for a charleyhorse, which is an injury to a muscle, usually the quadriceps femoris, depends on when the patient reports for treatment. The injury consists first in a contusion to the muscle by a direct blow, which results in a hematoma as a rule. Later this hematoma may organize into a myositis ossificans, forming soft bone in the muscle. This bony formation tends to grow larger and organize to produce real hard bone.

In the acute stage at the onset of a charleyhorse the leg should be packed in ice about the injured area and held quiet for half an hour to an hour. In the acute stage subsequently for about six weeks (*a*) the leg should be placed at rest in a cast or splint (preferably a cast for "children, athletes and idiots") and kept quiet for ten days, the patient continuing to wear the cast for six weeks; (*b*) diathermy, long wave treatments, should be given daily (the cast may be split for this); (*c*) heat or contrast baths should be given; gentle motion should be given every few days to prevent stiffness. If bone forms and causes pain or loss of function after six weeks, removal of the excess bone should be considered. This should not be done until the bone has become organized and is not growing in size as determined by roentgenograms. For a review of this condition see the article "Myositis Ossificans" by Marcus H. Hobart (*Am. J. Surg.* **34**:227 [Nov.] 1936).

2. The physiologic explanation for a cramp may not be entirely clear. There has probably been an overstimulation of the muscle fibers or the motor nerve, resulting in muscle and nerve fatigue. There may be a reduction in oxygen to the muscle cells and an excess of lactic and other acid or waste products.

3. Massage is contraindicated for a charleyhorse or muscle injury, especially at first, but is not contraindicated for a cramp, which is an entirely different pathologic entity.

ALUM PRECIPITATED AND PLAIN TETANUS TOXOID

***To the Editor:*—I am encountering veterans of both the army and navy who are in need of prophylactic measures against tetanus. I am under the impression that men who served with the navy were immunized against tetanus with the alum precipitated toxoid and those of the army with the plain toxoid and that an additional booster dose of either will suffice to protect the patient in the event of an injury. Can a booster dose of the alum precipitated toxoid be given to an army veteran who had the series of plain toxoid? Why is alum precipitated toxoid favored in civilian practice when plain toxoid does not produce a tender lump at the injection site as is seen with the use of alum precipitated toxoid?**

Glenn T. Howard, M.D., Pearsall, Texas.

ANSWER.—The navy has employed alum precipitated tetanus toxoid and the army has used the plain (fluid) tetanus toxoid.

Under ordinary circumstances a booster dose of either plain tetanus toxoid or of alum precipitated tetanus toxoid will suffice to protect a person in case of injury. The two types of tetanus toxoid are interchangeable, since the only difference consists in the presence of alum in the one and its absence in the other.

Because of the great variability in the duration of demonstrable (titrable) antitoxic immunity against tetanus (three or more months to five or more years) it is desirable that recall (booster) injections be administered in the presence of injuries considered likely to lead to the development of clinical tetanus. There are circumstances under which antitetanic serum (passive immunization) has been recommended instead of a booster dose of tetanus toxoid (active immunization). In the presence of serious hemorrhage, poor general health, diseases of a debilitating nature, severe or multiple injuries or delay in the injection of tetanus toxoid, the use of adequate doses of antitetanic serum (10,000 or more units) is justified. There is a definite difference of opinion concerning this particular problem, so that failure to employ tetanus antitoxin under these circumstances cannot be interpreted as an act of negligence.

It is supposed that basic immunity, the ability of the body to respond to a booster dose of tetanus toxoid, is lifelong. The available data indicate that a person will produce tetanus antitoxin in response to a booster dose of tetanus toxoid as long as five to six years after initial immunization with tetanus toxoid. The response is characterized by four features: 1. Acceleration: A high level of antitoxin appears in seven days or less, thus providing adequate immunity in the presence of short incubation periods. 2. Augmentation: The antitoxic level after the booster dose is remarkably increased, sometimes to levels as high as fifty to one hundred times those present at the time of recall injection. 3. Prolongation: The duration of antitoxic immunity is more persistent than that evoked by the previous injections.

4. Facilitation: The body responds to minute doses of tetanus toxoid. Thus, a recall injection of but 0.1 cc. elicits a satisfactory immunologic response. The practical significance of this phenomenon ("hair trigger reaction") resides in the fact that the employment of minute booster doses of tetanus toxoid minimizes the incidence of discomforting local and constitutional reactions among those repeatedly subjected to injuries which require the use of booster injections of tetanus toxoid. However, at present it is customary to employ the volume of tetanus toxoid recommended by the manufacturer.

Although it is the theoretical consensus that alum precipitated tetanus toxoid is antigenically superior to the fluid toxoid, fluid toxoid is a satisfactory immunologic agent, as evidenced by its successful use in the United States Army. Sensitivity reactions are reported to be of lesser incidence and severity with alum precipitated tetanus toxoid than with plain (fluid) toxoid, although adverse reactions are infrequent with the latter. One advantage of alum precipitated tetanus toxoid is that two doses are usually sufficient to induce immunity, whereas three injections of the fluid toxoid are commonly recommended.

Plain tetanus toxoid is now commercially available.

ELECTRIC SHOCK AND VARICOSE VEINS

To the Editor:—A man received second degree burns of the soles and of the left arm and developed varicose veins of both legs following an electric shock from a 220 volt circuit, 30 amperes. Varicose veins first appeared below both knees from sixty-five to seventy-two hours after the electric shock and have extended upward above the knee on the left leg. Could electric shock from such a circuit, which was severe enough to pull the patient down and require the assistance of fellow employees to break the circuit, be considered a factor in the development of the varicose veins? Available evidence indicates that the man did not have varicose veins prior to the accident.

Francis E. Sultzman, M.D., Hannibal, Mo.

Answer.—There is at least one reported case in which occlusive phlebothrombosis in a leg was thought to have been caused by an electric shock. According to Homans the compensatory dilatation of collateral venous channels following an occlusive phlebothrombosis may lead to permanent varices. Thus the possibility that an electric shock may result in the development of varices cannot be categorically denied.

It is a fact, however, that there is neither experimental nor reliable clinical evidence to indicate that persistent phlebectasia has been caused by electric shock. It is also true that in the case of spontaneous varices the transition from a nonsymptomatic to a symptomatic phase of the disease may be so abrupt that the patient is unaware of his disorder until within a few days of the time that he seeks medical advice.

In view of these facts the existence of a cause and effect relationship between the electric shock and the development of varicose veins in the case described in the query appears to be improbable but not impossible.

References:

Zehrer, G.: Elektrisches Trauma und Thrombose, *Monatschr. f. Unfallheilk.* **46**: 114, 1939.

Homans, J.: Circulatory Disease of the Extremities, New York, Macmillan Company, 1939, p. 172.

CENTRAL CHOROIDITIS

To the Editor:—1. Is there any treatment for the visual disturbances in central choroiditis, and why does it occur only at intervals? 2. If there is loss of central vision, is any treatment necessary in cases not due to syphilis? 3. Has undulant fever proved to be a cause of central choroiditis?

M.D., Arizona.

Answer.—1. Central choroiditis is a term rather loosely applied to all sorts of circulatory, inflammatory, degenerative and atrophic changes occurring in the region of the macula. The variety in which visual disturbances come only at intervals is probably due to central angiospastic changes or to the presence of an infective focus occurring intermittently in the presence of ocular tissue allergy. Treatment in the former is directed toward elimination of all toxic factors, a correction of metabolic disorders and study of the reactions of the peripheral circulation with a view to increasing its stability and maintaining a dilatation of the smaller vessels. Intravenous injections of typhoid vaccine (10 to 25 millions) or papaverine hydrochloride ¼ grain (15 mg.) or nicotinic acid by mouth are often effective. Sedatives may help hyperemotional patients. Tobacco and exposure to cold and fatigue should be avoided. In the inflammatory type the most important element in the treatment is to determine and eliminate the etiologic factor. In some instances desensitization to tubercle protein or streptococcus toxin is indicated. In the more chronic stages iodides may aid the healing process. Telescopic lenses may provide reading vision even in some old healed lesions.

2. Even though central vision has been lost, particularly if only unilaterally, every care should be taken that damaging repetitions do not occur.

3. Undulant fever is accepted as a cause.

ALOPECIA AND PREGNANCY

To the Editor:—A quintipara who has had normal pregnancies and rapid deliveries has lost hair from her head with each pregnancy. At the present time she is nearly bald. In the books available alopecia with pregnancies is not mentioned. What are the prognosis and treatment?

M.D., Michigan.

Answer.—The information furnished is too incomplete to tell what kind of alopecia this woman has. Does hair regrow between pregnancies? Is the hair loss diffuse or in patches? If the latter is the case, then she probably is suffering from alopecia areata. The prognosis is relatively good if she is less than 35 years of age and if the hair has regrown readily before. If the alopecia is of the diffuse variety and has been progressive without attempts of regrowth, then the prognosis is indeed bad. It is most likely that the hair loss is instigated through endocrine changes, probably initiated by the pituitary. Pituitary extract may be of value in certain types of alopecia and may be tried. The patient should be thoroughly studied. Thyroid medication may be indicated. Local therapy will probably not be effective, although ultraviolet exposures to the scalp and stimulating applications may be tried. For the latter the following prescription is useful: tincture of cantharides 8 cc., tincture of capsicum 1 cc., alcohol 45 cc. and rose water to make 150 cc.

OCULAR VERTIGO

To the Editor:—A woman aged 67 becomes intensely dizzy with a tendency to falling forward whenever she watches passing cars. Complete clinical and laboratory examination have been normal except for hypertension with blood pressure of 190/110 and an irritable colon. Labyrinth studies have been normal. Please discuss the physiologic mechanism of the vertigo in this patient.

George Vash, M.D., Chester, Mass.

Answer.—The patient described in the query seems to have normal physiologic vertigo known as ocular vertigo. This type of vertigo is usually associated with nystagmus and is analogous to the dizziness that appears in many people when they gaze at telegraph posts while on a moving train. There may be another type of vertigo, described by Otfried Foerster of Breslau, due to a lesion of the cerebral cortex with stimulation of the superior lip of the interparietal sulcus of the brain.

FALSE REACTIONS IN TESTING URINE FOR SUGAR

To the Editor:—What drugs cause false reactions in testing for sugar? How much aspirin will cause it?

M.D., Illinois.

Answer.—None of the drugs usually employed therapeutically, including acetylsalicylic acid, should in themselves produce falsely positive reactions for sugar in urine, although some drugs, such for example as camphor, chloral hydrate, morphine and many aromatic alcohols or phenols, are eliminated as conjugate glucuronates, and the glucuronates reduce the copper reagents. The administration of some drugs also results in a low grade glycosuria. Ether anesthesia causes an increased excretion of ascorbic acid, which reduces the copper reagents, as does homogentisic acid, found in the urine in alkaptonuria.

At the present time Benedict's qualitative reagent (The Journal, Oct. 7, 1911, p. 1193) is the copper reagent of choice, since it is more specific and sensitive for sugar in urine than the older Fehling's and Haines's solutions and is not reduced by creatinine, uric acid, chloroform or the simple aldehydes.

TREATMENT OF FACIAL ANGIOMAS

To the Editor:—With regard to the query in The Journal July 6, 1946, page 873, concerning the treatment of facial angiomas in infants, I would protest the answer and advice given. The angioma described will cease growing before the child is 10 months of age, and it will involute spontaneously before the child is 5 or 6 years of age. There is no justification for the treatment of the described angioma. It is regrettable that the majority of dermatologists adhere rigidly to the old concepts of treatment of angiomas. The pediatricians must familiarize themselves with the newer concepts and adopt a more critical attitude toward the diagnosis and treatment of vascular nevi.

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C. Russell Anderson, M.D., Los Angeles.

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KERATOSIS OF THE LARYNX

Chairman's Address

LOUIS H. CLERF, M.D.
Philadelphia

Epithelial hyperplasia of the larynx may assume all gradations from simple diffuse thickening in chronic inflammation to localized keratosis, papillomatous masses which fill the larynx or carcinomatous ulceration with extensive invasion. As a result, difficult problems in diagnosis are encountered.

Localized areas of thickening of the epithelium which appear as single or multiple chalky white elevations on the upper surface and edge of one or both vocal cords usually with involvement of the membranous portion are not uncommon. These have been designated as keratosis, hyperkeratosis, leukoplakia, pachydermia laryngis or by other terms by laryngologists and pathologists, and by some these terms appear to be used synonymously; others consider them as distinct and different entities.

Pachydermia laryngis as described by Virchow referred to thickening of the posterior wall of the larynx and the posterior half of the vocal cords. It was observed in alcoholic addicts or excessive voice users, as street hawkers. The involved areas are grayish white and exhibit proliferation of the superficial epithelium as well as thickening of the basal layers, so that the histologic appearances often suggest papilloma.

Keratosis, hyperkeratosis or leukoplakia is primarily a localized benign hyperplasia of epithelium which does not invade the submucosa. The whitish surface which may appear smooth or granular or may exhibit elevations or villous projections stands out in contrast to the surrounding cordal mucosa which often is the seat of a chronic inflammatory process.

CAUSES

The causes of keratosis are still in the realm of speculation. It is observed more commonly in male adults who are addicted to excessive smoking, particularly of cigarets. Although I am convinced that this is a predisposing factor, it is obvious that such a statement lacks definite proof. Excessive use of the voice and alcoholism do not appear as important etiologic factors. The incidence of syphilis does not appear greater among patients with keratosis. The frequent association of keratosis with chronic laryngitis suggests long-continued irritation as a predisposing cause. Studies in food deficiency diseases indicate that keratosis is often a manifestation. It has long been observed that keratinization of the skin is related to disturbances in vitamin A metabolism. Whether this is the result of an inadequate diet or failure to assimilate vitamins cannot always be accurately determined. Wolbach and Howe[1] have reported changes in epithelium which followed deprivation of fat soluble vitamin A in experimental studies on rats. These changes consisted of the substitution of stratified keratinizing epithelium for normal epithelium in various parts of the respiratory tract and elsewhere. There is clinical evidence to substantiate this view.

Graham[2] reported his observations on the effects of a high vitamin diet in a case of keratosis of the larynx. In spite of a histologic diagnosis of carcinoma there was observed remarkable regression of the entire lesion as soon as attention was paid to the patient's diet.

In discussing keratosis in general, Reimann[3] considered it "to be primarily a disease of shedding of the superficial layers. These cells do not differentiate as do normal cells but stick together, pile up and produce the islands we call keratinized because of the excess of keratin in the cells." The occasional appearance of villous projections on an area of keratosis has suggested a mycotic origin, since these appear similar to the mycelial filaments observed in infections by the leptothrix group. Histologic study of the white villi in keratosis shows cornification of epithelium. The rare occurrence of a leptothrix is an incidental observation.

Although excessive use or abuse of the voice may lead to localized keratosis seen as vocal nodules or to diffuse polypoid hyperplasia of the vocal cords, the clinical and histologic appearances are not those of keratosis (fig. 1).

While there is definite overgrowth of epithelium, the basement membrane is usually even, and the submucosal tissues exhibit little or no inflammatory reaction and are the seat of edema. In the forms of keratosis appearing on the surface of a vocal cord there is commonly observed a variable amount of inflammatory reaction in the submucosa. This has caused much comment, and the question has arisen whether it is of prognostic import. New and Erich,[4] Graham,[2] Bucher[5] and others have directed attention to this pronounced subepithelial inflammation (fig. 2).

PRECANCEROUS LESIONS

Clinical observations have long shown that many tumors arise from tissues that were once normal, and various forms of chronic inflammatory changes are

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Read before the Section on Laryngology, Otology and Rhinology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

[1] Wolbach, S. B., and Howe, P. R.: Tissue Changes Following Deprivation of Fat Soluble A Vitamin, J. Exper. Med. **42:** 753, 1925.

[2] Graham, H. B.: Keratosis of the Larynx, Arch. Otolaryng. **36:** 735 (Nov.) 1942.

[3] Reimann, S. P.: Personal communication to the author.

[4] New, G. B., and Erich, J. B.: Benign Tumors of the Larynx: Study of 722 Cases, Arch. Otolaryng. **28:** 841 (Dec.) 1938.

[5] Bucher, C. J.: Personal communication to the author.

observed to precede the appearance of many tumors. This brings up the interesting and much debated question of whether keratosis or any form of benign epithelial hyperplasia may be considered as a so-called precancerous lesion.

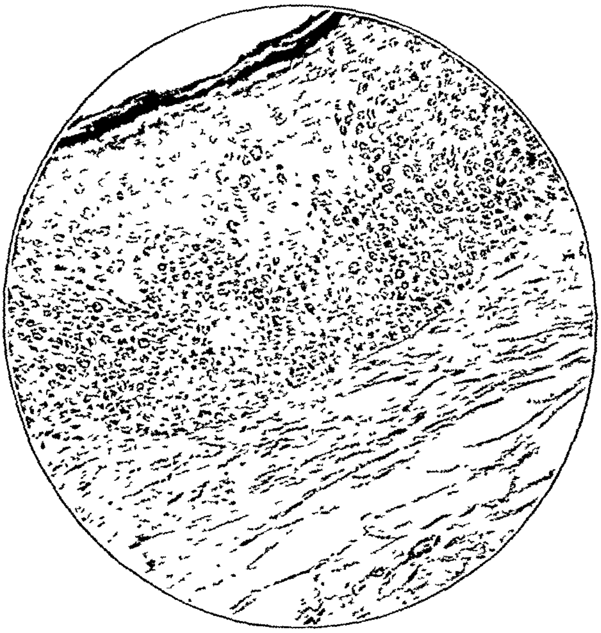

Fig. 1—Photomicrograph (× 200) of a hyperplastic vocal cord. The epithelium is greatly thickened, but the basement membrane is regular. There is definite edema and fibrosis with a few inflammatory cells in the submucosal layer.

In chronic inflammatory lesions of the larynx in which there develops decided hyperplasia of the epithelium in an effort at repair, this hyperplasia and this irregularity frequently suggest early malignant changes. The term precancerous has been applied to this type of lesions by many writers, and there undoubtedly is some justification for its use by laryngologists when they have under consideration certain benign lesions that have undergone malignant changes. As stated by Crawford[6] "in the histologic examination of tissue in a number of these cases it was impossible to predict with any degree of certainty in which cancer would develop and in which recovery would occur." It is, of course, obvious that the pathologist cannot anticipate by a study of cells that a benign lesion will become malignant. Coplin[7] appropriately stated that "histology rarely, if ever, tells us what a cell is going to do before it does it, although many of us are constantly deluding ourselves into the belief that we can deduce the future of a cell from a study of the past or present or both."

In Graham's[2] case of keratosis there was histologic evidence of carcinoma. Morrison[8] reported a case of keratosis in which a carcinoma apparently developed as a single small island of malignant cells in the subepithelial layer beneath a mucous gland. A satisfactory result was secured by laryngofissure. New and Erich[4] reported 10 cases, in 2 of which there developed squamous cell carcinoma. The carcinomatous lesions were definitely localized in both of these cases. The carcinoma was discovered histologically, and the authors emphasized the importance of thorough microscopic examination. Eggston[9] stated that keratosis should always be considered a precancerous lesion. After many years of experience in a study of the pathologic changes observed in these cases he found in many instances that they sooner or later, after several biopsies, had grown to be frankly epidermoid carcinoma. This may occur in a matter of months or even years. He expressed his conviction that keratosis of the larynx should be treated as a precancerous lesion and preferably by surgical removal. Reimann[3] believed that many of these lesions are precancerous but that it is impossible to say which of a group of such keratoses will turn into cancer. In the interests of cancer prevention, if all keratoses were removed completely none could develop into carcinoma. While it is not known whether carcinoma develops from purely local causes or whether, in addition, there must be a constitutional or genetic influence, he stated that in the case of certain extremely powerful carcinogens, probably the local influence far outweighs any other; but in the case of keratoses in general, there is certainly a constitutional predisposition. In discussing keratosis, the Jacksons[10] stated that "so far no case has shown malignant developments."

PATHOLOGY

From the pathologist's point of view, Bucher[5] described the whitish elevations on the vocal cords as small masses of hyperplastic squamous epithelium, which at times are suggestive of papilloma, but the usual characteristic arrangement is lacking. The basement membrane is commonly regular, sometimes pushing into the submucosa in small irregular projections so that it becomes difficult to decide whether there is infiltration or whether the process is merely a part of the hyperplasia. In most instances a good basal layer of epithelium is observed. The keratinization varies

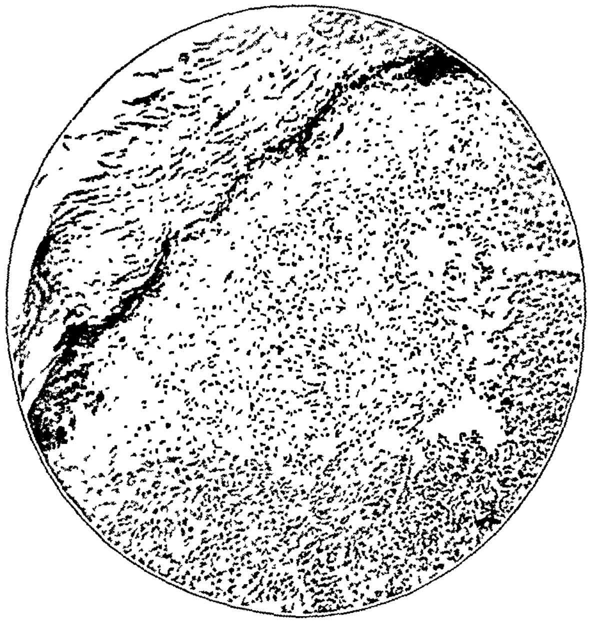

Fig 2—Photomicrograph (× 100) of section with definite epithelial hyperplasia and keratinization. The basement membrane lacks clear definition, the basal cells are deeply staining; the submucosal layer exhibits pronounced inflammatory changes. This type of keratosis is extremely suggestive of early carcinoma.

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7. Coplin, W. M. L.: A Basis for the Prevention of Cancer, J. A. M. A. **78:** 1523 (May 20) 1922
8. Morrison, L. F.: Keratosis of the Larynx Showing Early Malignant Changes, Tr. Pacific Coast Oto-Ophth. Soc. **25:** 235, 1940.
9. Eggston, A. A.: Personal communication to the author.
10. Jackson, C., and Jackson, C. L.: Diseases and Injuries of Larynx, ed. 2, New York, The Macmillan Company, 1942.

in different persons. The changes in the submucosal tissues are important and consist in infiltration with cells of inflammatory origin (namely, lymphocytes, monocytes and plasma cells), the presence of numerous thin-walled vessels and edema with a variable amount of fibrosis. Occasionally there are deposits of blood pigments. The older pathologists referred to this type of keratosis as pachydermia verrucosa. In reviewing histologic slides in a large number of cases of keratosis over many years, particularly in those in which frequent biopsies have been performed, it is his belief that lesions which show considerable inflammatory changes and great irregularity of the basement membrane should be dealt with in the same manner as early carcinoma.

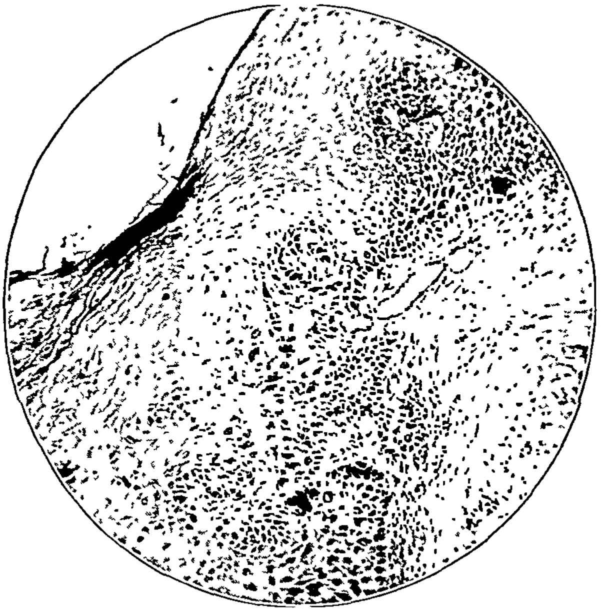

Fig 3.—Photomicrograph (× 100) of keratotic tissue reveals thickened epithelium with projections extending into the submucosal layer. The basement membrane, however, appears intact. Moderate inflammatory changes are present in the submucosa.

SYMPTOMS

Although the laryngoscopic appearances and the extent of the keratotic lesions may vary, there is commonly but one symptom, namely, change in the voice. This may consist only of slight huskiness, or the voice may be hoarse. Occasionally there may be clearing of the throat.

TREATMENT

In an experience covering a considerable number of cases I have been impressed with the fact that it is difficult if not impossible to prognosticate the outcome in any 1 case. Irrespective of the plan of therapy employed, frequent examination of the larynx is imperative because of the rapid recurrence of simple keratosis in some patients and changes in others that suggest the occurrence of carcinoma. In certain cases, the patients recover on a regimen of no smoking, vocal rest, vitamin therapy and the removal of keratotic material by the use of cupped forceps or other appropriate means. In another group these therapeutic measures appear inadequate, and masses of keratosis reappear in spite of frequent removals without, however, any histologic evidence of carcinoma. In such cases it may be necessary to strip the vocal cords of their mucosal and submucosal coverings as described by Loré[11] and Putney and Clerf.[12] In a third group the clinical and histologic appearances are so suggestive of carcinoma that laryngofissure appears to be indicated, although study of the material removed at operation may fail to reveal any evidence of carcinoma; and, lastly, there is the group in which at some time or other during the course of the disease carcinoma develops in or about the site of the keratosis. Cases illustrating these groups will be cited.

REPORT OF CASES

Cases That Responded to Conservative Therapeutic Measures

A man aged 52 was observed eleven weeks after the onset of hoarseness, subsequent to an acute infection of the upper respiratory tract. He was a moderate smoker of cigarets. Mirror laryngoscopy revealed extensive keratosis which involved the upper surface and edge of the right vocal cord Direct laryngoscopic removal of keratotic areas was performed and all the material was examined histologically. This revealed hyperplastic epithelium with moderate inflammatory changes in the submucosa. There was no evidence of carcinoma (fig. 3). The patient was placed on a regimen of no smoking and moderate use of his voice and given large doses of combined vitamins. A second laryngoscopy was necessary to remove additional keratotic material. The patient made a satisfactory recovery, and there has been no recurrence of keratosis for over eight months.

Cases Requiring Frequent Removal of Mucosal and Submucosal Tissues

A man aged 48 was first examined in September 1941. He had been hoarse for one year after a cold. He was an excessive smoker of cigarets and used alcohol moderately. Mirror laryngoscopy revealed a whitish granular-appearing lesion on the upper surface of the anterior half of each vocal cord. Both cords exhibited definite inflammatory changes and the edges appeared irregular, suggestive of probable neoplastic changes. Biopsies were performed from both cords. There was pronounced hyperplasia of epithelium with inflammatory infiltration of the submucosa (fig. 2). The patient was advised to discontinue smoking and placed on combined vitamin therapy but failed to cooperate. A total of fourteen removals of keratotic material were performed over a period of four and a half years, and all the tissue was examined histologically. On five occasions the pathologist reported that the changes were extremely suggestive of early carcinoma, but no positive diagnosis could be made. In February 1944, two and one-half years after treatment was begun, the left cord remained free of keratosis, and when the patient was last seen in April 1946 there still appeared a small patch on the right vocal cord. At no time after the first examination did the clinical appearances suggest carcinoma, and for that reason it was decided not to carry out any radical surgical procedure, for the extent was such that both vocal cords would have had to be removed. The patient now is following the prescribed plan of therapy, and the prognosis appears good

Cases Not Frankly Carcinoma but Requiring More Radical Therapeutic Measures

This group is represented by 2 men, aged 48 and 67 respectively, who had unilateral keratosis involving the anterior half of the right vocal cord The lesions appeared nodular with decided inflammatory changes and were suggestive of carcinoma. The biopsy report was keratosis with many mitotic figures and pronounced submucosal inflammation Although a positive histologic diagnosis of carcinoma could not be made, the lesions nevertheless appeared clinically to be suggestive of carcinoma, and for that reason laryngofissure was performed. The membranous vocal cord was removed in each case and studied histologically, but in neither case was there evidence of carcinoma. These patients developed excellent voices, since removal of the cord did not include the perichondrium, and a satisfactory vocal band ultimately developed.

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[11] Loré, J. M.: Stripping of the Vocal Cords, Arch. Otolaryng. **42:** 378 (Nov.-Dec.) 1945.

[12] Putney, F. J., and Clerf, L. H.: Treatment of Chronic Hypertrophic Laryngitis, Arch. Otolaryng. **31:** 925 (June) 1940.

Cases of Keratosis Which Ultimately Exhibited Histologic Evidences of Carcinoma

This group consisted of 4 cases in which the patient's disease had been under treatment for prolonged periods as keratosis but ultimately developed into carcinoma. In 3 cases laryngofissure was performed and in 1, a laryngectomy.

Case 1.—A man aged 55 was first observed in February 1938. There was a history of keratosis with hoarseness of two years' duration. At the time of observation in 1938, there was an area of keratosis on the upper surface of the right vocal cord, anteriorly, with a larger patch on the upper surface of the left vocal cord, involving its middle and anterior thirds. The histologic report was hyperplasia and keratosis of the epithelium with submucosal inflammation. There was no evidence of carcinoma. The patient returned to his physician, a laryngologist, who kept him under observation, and no change was observed until the fall of 1942, three and one-half years later, when a papillary lesion appeared on the left vocal cord. Biopsy revealed a squamous cell carcinoma. The lesion was small and was removed by laryngofissure in November 1942. The patient has had no recurrence of carcinoma or keratosis since that time.

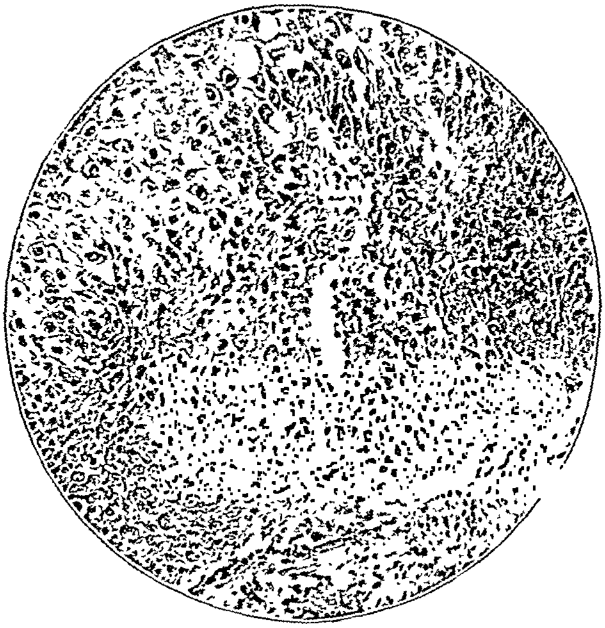

Fig. 4.—Photomicrograph (× 200) revealed definite epithelial hyperplasia, deeply staining nuclei and occasional mitosis. The basement membrane was only fairly well defined. There was considerable submucosal inflammation. Over three years later a small area of carcinoma was discovered by biopsy.

Case 2.—A man aged 53 was first observed in August 1943. He was an excessive smoker of cigarets. A diagnosis of chronic laryngitis had been made over two years previously, and he was kept under observation. When he was examined in 1943, there was a white lesion with small villous projections on the anterior half of the right vocal cord. A histologic diagnosis of keratosis was made. There was no evidence of submucosal invasion. There were many mitotic figures, and there was submucosal infiltration with round cells. Dr. Bucher who examined the tissue stated that while the histologic appearances were those of keratosis the extent of involvement and the associated submucosal inflammatory changes together with the occurrence of mitotic figures suggested that this was a borderline case (fig. 4). The patient discontinued smoking and was placed on vocal rest. In April 1946, over three years later, there was an increase in hoarseness, and a granular nodule was found on the right vocal cord in its anterior third. The biopsy report was squamous cell carcinoma, intermediate grade. The lesion was removed by laryngofissure.

Case 3.—A man aged 38, an inveterate cigaret smoker, had been hoarse for eight months. On examination in October 1942 there was observed keratosis on the upper surface and edge of each vocal cord, anteriorly, extending into the anterior commissure. There was definite heaping up of keratotic material on the right cord suggestive of a nodule. A biopsy revealed no carcinoma. The epithelium was thickened, but there was little submucosal inflammation. Five removals of keratotic material from both vocal cords were performed during the succeeding eight months. All the tissue was negative for carcinoma. For a time there was no recurrence of keratotic material, but in January 1944 there was a recurrence of a large mass on the upper surface of the left vocal cord and of a smaller mass on the right cord. Biopsy of the left cord revealed carcinoma. A laryngofissure was performed and both vocal cords were removed.

Case 4.—A man aged 46 was first examined in August 1943. He had been under observation and treatment elsewhere for three years. Various diagnoses had been made, including keratosis, fungus infection and carcinoma. He had been given large quantities of vitamin A with some resultant improvement in the voice but no apparent change in the larynx. On examination a large granular white area was observed on the edge and upper surface of the right cord. The left cord was normal. The appearances were suggestive of carcinoma, but a biopsy was negative. Additional tissue was removed with negative findings. Because of the apparent lack of improvement and the duration of symptoms for more than five years the patient changed physicians, and the larynx was not examined for one year. He returned in May of 1946 with an extensive ulcerated lesion involving the entire right vocal cord. A biopsy revealed a squamous cell carcinoma, and it was necessary to perform a laryngectomy.

COMMENT

While keratosis is often observed in association with carcinoma of the larynx, the 4 cases cited herein exhibited evidences of keratosis of the larynx for two to four and one-half years from the time that I first observed them until a diagnosis of carcinoma was made; and, in addition, it was known that keratosis was present for eight months in 1 case, two years in 2, and three years in 1 case before the patients were examined by me. It is evident therefore that I was dealing with keratosis in the beginning and that carcinoma developed later. While there is no evidence to indicate that the keratotic cells ultimately assumed a malignant character, there is justification for the statement that patients with keratosis of the larynx should be carefully observed because in a certain proportion of cases carcinoma will develop.

CONCLUSIONS

Keratosis of the larynx is a relatively common benign condition. It is more often observed in adult males and particularly in those who smoke excessively.

There is experimental and clinical evidence to suggest that keratosis of the larynx is a manifestation of a metabolic or a food deficiency disease.

Clinical observations indicate that although keratosis per se is benign, there are a certain number of keratoses that either become carcinoma or predispose to its development.

While the outstanding changes observed histologically in these cases are epithelial hyperplasia and submucosal inflammation, it is impossible for the pathologist to anticipate in any given case that cancer will develop, although at times it is difficult to differentiate between early carcinoma and simple keratosis.

Patients with keratosis of the larynx should be kept under close observation; the involved areas should be removed and all tissue examined histologically. If there is any question of the occurrence of carcinoma, more radical surgical intervention is indicated.

VENOUS THROMBOSIS

ALTON OCHSNER, M.D.
New Orleans

The significance of venous thrombosis is exemplified by the interest which is shown in this subject by physicians in general. The fact that on the present program of the Section on Surgery, General and Abdominal, of the American Medical Association three titles are concerned with the subject of venous thrombosis is indicative of the importance of the condition. The significance of venous thrombosis is further demonstrated by the observations in McCartney's[1] autopsy cases. In 25,771 necropsies performed at the University of Minnesota from Jan. 1, 1919 to Dec. 31, 1938, death was due to pulmonary embolism in 687 (2.67 per cent). Even more remarkable was the disclosure that in 107 of the cases embolism had already occurred, or a thrombus existed which could have produced a fatal embolism. Venous clotting is of importance not only because of the symptoms which are associated with certain types, but also because of the possible sequelae, such as the persistence of symptoms subsequent to thrombophlebitis or even the occurrence of death from pulmonary embolism.

Clinical experience and experimental observations have resulted in a conviction that one cannot consider all venous thromboses as the same type of lesion, but that one must differentiate between two types which are different etiologically, symptomatically, prognostically and therapeutically. Unless there is a differentiation between these two types of venous thrombosis, the therapy is likely to continue to be unsatisfactory. In 1939 DeBakey and I[2] emphasized the importance of differentiating thrombosis associated with an inflammatory process of the vein from that of the bland thrombus occurring in a vein in which there is no inflammatory lesion. At that time the suggestion was made that in addition to considering thrombophlebitis, which designated that condition in which there is an inflammatory process involving the vein associated with thrombosis, the physician must consider phlebothrombosis, which "may be defined as partial or complete venous occlusion by an intravascular clot which is unassociated with inflammation, the clot being loosely attached to the vein wall." This differentiation has been emphasized in subsequent publications[3] and has been generally accepted, although there are a few who have not been willing to accept the designation of phlebothrombosis or to admit that such a condition occurs, maintaining that in all instances an underlying inflammatory process is responsible for the development of thrombosis in the patient. Jensen[4] expressed the opinion that phlebothrombosis does not occur except after trauma and will occur only in incised, lacerated or abraded wounds. On the other hand, Hunter and his associates[5] expressed the opinion that phlebothrombosis and thrombophlebitis are two distinct entities. Their conclusion was based on a careful anatomic investigation and was not a mere clinical presumption, which is apt to be inaccurate. In 350 unselected autopsies, the veins of the calf muscles were examined in 209 instances. Venous thrombosis was found in 185 cases, and in only 17 instances (9.1 per cent) was there evidence of a phlebitis; in the remainder there was no evidence of an inflammatory process, although a thrombus was present in the veins. These authors concluded that as far as thrombosis of the veins of the calf muscles is concerned, inflammation of the vein, i. e. phlebitis, has little to do with the production of the clot.

The mechanism of the clot formation in the two types of venous thrombosis, thrombophlebitis and phlebothrombosis, is entirely different. In thrombophlebitis, as a result of the inflammatory process of the vein wall, there are changes within the vascular endothelium which predispose to clotting. This is similar to the process that occurs when a sclerosing agent is introduced into a varicosity. In the spontaneously occurring thrombophlebitis, the inflammatory process is usually the result of involvement of the vein secondary to perivenous lymphangitis, the micro-organisms being carried to the vein through the lymphatic system. In some instances there is evidence that the changes in the vascular endothelium are not due to bacterial invasion but may be caused by toxins or allergic sensitization (Turnbull[6]). In thrombophlebitis, unless it is associated with a severe suppurative process such as lateral sinus thrombophlebitis or portal thrombophlebitis, the femoral and iliac veins are usually the ones involved. Since the thrombus in thrombophlebitis is the result of inflammatory change in the vein wall, particularly the endothelium, the resultant clot is either a white or a mixed thrombus and is firmly attached to the vein wall. For this reason, with two possible exceptions, thrombophlebitis is not associated with embolism because the clot is attached and cannot become detached. The first of the two exceptions is the possible formation proximal to the area of thrombophlebitis of a bland thrombus, or coagulation thrombus, which is not attached and which can become detached. This is usually of little significance, because it is a relatively short clot, and if it did become detached it would produce a small infarction. The formation of such a clot should not be permitted, and it can be prevented by mobilization of the involved extremity during the treatment of the thrombophlebitis. The other exception is suppurative thrombophlebitis in which, as a result of liberated proteolytic ferments, the fixed clot can become liquefied and permit fragments to break off with the resultant production of septic emboli. This is usually observed in patients with severe pelvic infections and is generally subsequent to criminal abortion. In this instance, the detachment of the thrombus is the result of a suppurative process and does not result because the clot was detached. In contrast, the mechanism of the formation of the thrombus in phlebothrombosis is entirely different. There is no inflammatory process

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From the Department of Surgery, Tulane University of Louisiana School of Medicine, and the Ochsner Clinic.

Read in the General Scientific Meetings at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 1, 1946.

Because of lack of space, this article is abbreviated in The Journal by omission of portions of the text and footnotes. The complete article will appear in the author's reprints.

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[5] Hunter, W. C.; Sneeden, V. D.; Robertson, T. D., and Snyder, G. A. C.: Thrombosis of the Deep Veins of the Leg: Its Clinical Significance as Exemplified in 351 Autopsies, Arch. Int. Med. **68**: 1 (July) 1941.

[6] Turnbull, J. A.: Allergy as a Factor in Thrombosis, Am. J. Digest. Dis. **10**: 194, 1943.

in the vein wall, and the clot is the result of two factors, the increased coagulability of the blood and the slowing of the blood stream. The clot which is formed is a red or coagulation thrombus similar to the clot which occurs in a test tube when blood is withdrawn from the vascular system. It is only loosely attached to the vein wall; it can become detached relatively quickly, with the same ease as the coagulum which appears in the test tube can be detached from the walls of the tube when the tube is inverted. These thrombi, as has been shown repeatedly by autopsies,[8] usually originate in the veins of the calf muscles or in the veins on the plantar aspect of the foot but may extend up into the deep veins of the thigh and pelvis. They are extensive thrombi and, since they are not firmly attached, are of real potential danger, because of the possibility that they will be detached and carried through the venous system to the heart and lungs, thereby producing varying grades of infarction from relatively insignificant peripheral infarction to total occlusion of both pulmonary veins, with sudden death. It is possible, if for some fortunate reason the coagulation thrombus in phlebothrombosis does not become detached, that sufficient inflammatory reaction will occur in the intima of the vessel and firm attachment will ultimately take place. Bauer[9] expressed the belief that this process begins soon after the formation of the thrombus. I am of the opinion, however, that it is a late and infrequent phenomenon and should not be anticipated.

Although the mechanism for the development of the thrombus in thrombophlebitis is readily understandable, the mechanism for the development of the coagulation thrombus in phlebothrombosis is less obvious. In the former disease, as mentioned previously, the clot formation is dependent on changes within the wall of the vessel, particularly in the intima. In the latter, thrombosis is dependent on an increased coagulability of the blood, which results from changes in the blood's constituents, because of trauma. Shafiroff and his co-workers[10] showed that 92 per cent of the patients with postoperative venous thrombosis and primary acute thrombophlebitis had hypercoagulability of their blood, and that the average acceleration of blood coagulation in these patients was four and one-half times that in normal subjects. Localization of the clot in the veins of the lower extremity is dependent on the slowing of the blood stream in that part of the body. It is my belief, as well as that of others, that as a result of tissue injury, and with few exceptions, whatever the cause of the injury, changes in the blood's constituents occur which favor blood clotting. This is undoubtedly a protective mechanism and is responsible for the lack of persistent hemorrhage in severe trauma. As a result of operative trauma, trauma during delivery, accidental trauma and the injury of tissue by the invasion of neoplastic disease or infection there is an increased clotting tendency. Because of its manifold causes it is essential that the possibility of venous thrombosis, particularly phlebothrombosis, be considered in all patients who have suffered a trauma. The greater the trauma, the greater the tendency toward thrombosis.

Although the increased clotting tendency is the underlying and predisposing factor in phlebothrombosis, the precipitating factor is circulatory stasis, and it is this factor which is responsible for the development of the thrombi in the veins of the calf muscles and on the plantar aspect of the foot rather than in the veins of the upper extremity. In addition to these two factors, increasing age (probably because of the associated cardiovascular disturbance) and alterations of the vascular system are particularly likely to be associated with venous thrombosis. The presence of cardiac disease is especially important in the production of venous thrombosis. Hunter and his associates[5] found at autopsy that thrombosis of the deep veins of the leg in middle aged and old persons who had been in bed for varying periods of time was as high as 52.7 per cent. The involvement was bilateral in 110 instances and unilateral in 75 instances. Allen[18] stated that 82.3 per cent of his patients with venous thrombosis were above the age of 40. Veal and Hussey[19] found that 70 per cent of their 84 cases of venous thrombosis were in patients over 40 years of age.

There is a definite relationship between venous thrombosis and the seasons. This has been repeatedly emphasized.[3b, c] Allen, Linton and Donaldson[21] observed 32.9 per cent of their cases in the winter, 21.9 per cent in the spring, 18.9 per cent in the summer and 20.3 per cent in the fall in a series of 332 cases. It is my belief that the increased incidence of venous thrombosis during the winter months is due to the vasospastic influence of the cold weather. This explains the difference between the incidence of venous thrombosis observed in the northern and in the southern clinics. My associates and I[3e] showed that the incidence of venous thrombosis in the northern clinics was almost double that in the southern clinics. The average incidence in the northern states was 0.74 per hundred thousand population as contrasted with 0.41 in the southern states.

Other predisposing factors in this disease are obesity, debility, changes in the hemopoietic system, such as anemia and polycythemia, and excessive smoking.

As mentioned previously, increased coagulability resulting from changes in the blood's constituents because of tissue injury is one of the most important factors in the production of venous clotting, particularly phlebothrombosis. These changes in the blood are manifold, and the exact role played by each is not known, but probably all combine to exert a definite effect on the clotting mechanism.

In addition to the predisposing factors which favor blood clotting, the precipitating factors as mentioned previously are those which cause circulatory stasis. Any condition which produces a slowing of the blood stream is likely to result in the production of a coagulation thrombus in a person with an increased clotting tendency as a result of tissue damage. McCartney[1] pointed out that venous thrombosis occurred five to six times more frequently in cases which showed chronic passive congestion in the liver than in cases in which the liver was normal. The movement of blood in the venous system is dependent on a number of factors, such as the vis a tergo through the capillary bed, which varies according to the degree of vasodilatation or vasoconstriction and depends on cardiac function. Naide[28] expressed the opinion that patients with a high grade vascular tone are particularly likely to have venous thrombosis develop because of diminished blood flow. In a series of 17 cases, 16 patients had a high grade vascular tone. Smoking would be particularly detrimental to such patients. Another factor in favoring the movement of blood in the venous system is the negative pressure within the thorax, facilitating the flow of blood from the distal parts of the body. The third, and probably the most important, factor in the movement of blood in the venous system is the active contraction of the skeletal muscles. Prolonged rest in bed is an important factor in producing circulatory stasis, unless measures are instituted to obviate it. Although the patient who is in bed frequently moves his hands and arms, reaches to the bedside table, places his hands on his head or moves them to his face, he is likely, unless otherwise instructed, to keep his lower extremities perfectly motionless. This lack of muscular contraction is a great factor in producing retardation of the blood in the lower extremities. If the patient has been subjected to an abdominal operation or has had an injury of the abdominal cavity, he is less likely to breathe deeply because of the pain resulting from deep inspiration. This favors circulatory stasis, and as a result of a trauma, particularly of the abdomen, there is the likelihood of diminished circulation in the lower extremities because of vasospasm. If, in addition to these factors, there is increased intra-abdominal tension because of abdominal distention and the use of tight bandages, stasis within the veins of the lower extremities is greatly increased. The position which the patient assumes in bed is of importance. If he is placed in a head up position or particularly in a Fowler's position with the knees flexed on the thigh and the upper part of the body elevated, stasis in the calf veins is favored not only by gravity but also by the kinking of the popliteal veins in the popliteal space.

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[8] (a) Homans, J.: Venous Thrombosis in the Lower Limbs. Its Relationship to Pulmonary Embolism, Am. J. Surg **38**: 316, 1937. Rössle, R.: Ueber die Bedeutung und Entstehung der Wadenvenenthrombosen, Virchows Arch. f. path. Anat. **300**: 180, 1937. Neumann, R.: Ursprungszentren und Entwicklungs formen der Bein Thrombose, ibid. **301**: 708, 1938. (b) Hunter, W. C.; Krygrer, J. J.; Kennedy, J. C., and Sneeden, V. D.: Etiology and Prevention of Thrombosis of the Deep [illegible] Four Hundred Cases, Surgery **17**: 178, 1945. [illegible] son and Snyder.[5]

[9] Bau[illegible] in Acute Deep Venous Thrombosis, J. A. M. [illegible] 946.

[10] Shaf[illegible] H.; Barcham, I. S., and Co Tui: The Coagulability of Venous Blood of Normal and Diseased Legs: A Study of One Hundred Ninety-One Subjects, Ann. Surg. **118**: 482, 1943.

[18] Allen, A.: Thrombosis and Embolism: A Preliminary Report on the Comparative Results of Femoral Vein Interruption and Dicumarol Therapy, Bull. New York Acad. Med. **22**: 169, 1946.

[19] Veal, J. R., and Hussey, H. H.: Surgery of Deep Venous Thrombosis of the Lower Extremity, Surgery **17**: 218, 1945.

[21] Allen, A.; Linton, R., and Donaldson, G. A.: Venous Thrombosis and Pulmonary Embolism: Further Experience with Thrombectomy and Femoral Vein Interruption, J. A. M. A. **128**: 397 (June 9) 1945.

SYMPTOMATOLOGY

As mentioned previously, the differentiation between phlebothrombosis and thrombophlebitis must be made not only from an etiologic standpoint but also from that of clinical manifestations. In most cases of thrombophlebitis, the clinical picture is definite and well defined. The patient usually complains of pain in the involved extremity, there is usually a pyrexia, and with few exceptions there is swelling of the extremity. Color changes in the extremity are of significance. In cases with deep vein involvement (the type which is more common) there is a characteristic whiteness of the extremity, as suggested by the descriptive term "phlegmasia alba dolens." The temperature of the skin of the involved extremity is cool, which is an obvious paradox in view of the increased surface temperature of the rest of the body.

In superficial vein involvement the skin overlying the affected vein is red and warm. The fever is due to the inflammatory process in the involved extremity; the pain is due to an ischemia and is relieved by vasodilatation. The whiteness of the extremity, concerning which there has been considerable controversy in the past, is unquestionably due also to vasospasm, and this too is relieved by vasodilatation. The edema in thrombophlebitis was previously thought to be caused by increased venous pressure which resulted from the obstruction within the involved vein. The fact that a large vein such as the femoral, iliac or even vena cava can be ligated with the production of only transitory edema is certainly evidence against the hypothesis that the edema is due to obstruction of the vein. My associates and I[29] have previously shown that the edema is due to the ischemia resulting from arteriolar spasm and is promptly relieved by vasodilatation.

Although the patient with thrombophlebitis appears ill and is uncomfortable because of the pain, fever and swelling, the patient with phlebothrombosis is likely to have no symptoms whatever. In fact, I am convinced that the diagnosis must be made before any symptoms are manifest because usually the symptoms are the result of a complication, such as infarction or a beginning inflammatory process resulting from the retained thrombus. Although many of these patients complain of a sense of impending disaster (which should be considered of great significance in a patient who has had any tissue injury, because of the likelihood of an existing phlebothrombosis) they usually do not have fever. There may be an elevation of the pulse rate which is decidedly out of proportion to any elevation of temperature, because the latter, if present, is almost insignificant. An almost constant observation is an increased erythrocytic sedimentation rate. Because the patient with phlebothrombosis has few or no symptoms, the diagnosis must be made by careful routine examination of the lower extremities in all patients who have had any tissue damage. It is my rule routinely to palpate the calf muscles and the plantar aspect of the foot and to dorsiflex the foot forcefully (Homans' sign) in all patients who are in bed and who have had tissue injury. The detection of tenderness in the calf or on the plantar aspect of the foot, or the production of pain in the calf or popliteal space when the foot is forcefully dorsiflexed is indicative of phlebothrombosis. Although previously I thought that a suspected phlebothrombosis should be verified by phlebography, I now believe that phlebography is not necessary, and that immediate therapy should be instituted before the clot has a chance to become detached.

PROGNOSIS

The prognosis in thrombophlebitis and that in phlebothrombosis differs considerably in the untreated patient, although the prognosis need not be bad in either instance, if appropriate therapy is instituted early. The patient with thrombophlebitis, unless there is suppuration (in which event the thrombus may be liquefied with the detachment of small septic emboli) usually gets along well and does not succumb to the thrombotic process. The patient is likely to have postphlebitic symptoms which may last for many years. These consist of swelling, pain, possible ulceration and streptococcic infection in the involved extremity. The patient may be incapacitated for months, for years or for the rest of his life. On the other hand, the patient with phlebothrombosis is a potential fatality unless active measures are taken, because the thrombus is not firmly attached and can become detached on the slightest exertion. Although nonfatal infarction with a resulting pneumonitis can occur, the possibility of a massive pulmonary embolism resulting in sudden death is not only feasible but likely.

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[28] Naide, M.: A Test for Vascular Tone in Humans and Its Application to the Study of Vascular Diseases with Special Reference to the Etiology and Prevention of Thrombophlebitis, Am. J. M. Sc. **207**: 606, 1944.

[29] (*a*) Ochsner, A., and DeBakey, M. E.: Thrombophlebitis: Role of Vasospasm in Production of Clinical Manifestations, J. A. M. A. **14**: 117 (Jan. 13) 1940. (*b*) DeBakey, M.; Burch, G. E., and Ochsner, A.: Effect of Chemical Irritation of Venous Segment on Peripheral Pulse Volume, Proc. Soc. Exper. Biol & Med. **41**: 585, 1939. (*c*) DeBakey, M.: The Role of Vasospasm in Thrombophlebitis and Its Treatment by Novocaine Block of the Sympathetics, Tri-State M. J. **13**: 2654, 1941. DeBakey, M., and Ochsner, A.: Novocaine Sympathetic Block Method of Therapy in Thrombophlebitis, J. M. A. Alabama **11**: 87, 1941. Ochsner, A., and DeBakey, M.: Symposium on Vascular Thrombosis: Rational Therapy of Thrombophlebitis, New Orleans M. & S. J. **94**: 173, 1941. Footnote 3 *b*, *c* and *e*.

THERAPY

The initial treatment of venous thrombosis consists of prophylaxis. It is my belief that in most cases clotting within the venous system can be prevented if appropriate measures are instituted. Preoperatively, it is important that patients with cardiovascular disturbance should be treated to reestablish the cardiovascular function before a contemplated operative procedure is undertaken. This is particularly important in older persons and in patients with cardiovascular disease. I believe, too, that a patient who is to undergo an operative procedure should refrain from smoking for a period of from ten to fourteen days preoperatively because of the vasoconstrictor effect of smoking. Duryee[30] has emphasized the importance of this. Naide[28] showed that patients with increased vascular tone have a greater tendency to venous thrombosis. In order to increase the rate of blood flow through the deep veins it has been my practice, for many years, to apply compression bandages to the extremities in patients 40 years of age or older who are subjected to an operative procedure. No. 8 Ace bandages are applied to both lower extremities from the toes to the groin before the patient leaves the operating room. This is done not only in patients who have undergone an operation, but also in nonsurgical patients in whom there is destruction of tissue as a result of infection, neoplastic disease or trauma. The compression of the superficial veins by means of bandages increases the flow of blood through the deep veins and overcomes circulatory stasis. This is particularly advisable in the patient who has varicosities, because of the greater likelihood of the stasis of blood in the dilatated superficial veins.

Since obesity is a factor in predisposing to venous thrombosis, reduction of weight in the elective surgical case is of importance before the operative procedure is attempted. Also, the correction of any blood dyscrasia, such as anemia or polycythemia, is extremely desirable as a prophylactic measure.

Since the increased coagulability of blood is dependent on tissue injury, it is imperative during an operative procedure to avoid as much trauma as possible. The use of sharp dissection, the avoidance of mass ligation and the use of fine nonabsorbable suture material (particularly cotton, because it produces a minimal amount of wound reaction) decrease the tendency toward clotting. The prevention of circulatory collapse during the operation and the immediate postoperative period by the administration of fluids, and particularly by the reestablishment of blood volume, are of importance. Postoperatively, the avoidance of abdominal distention by means of the indwelling duodenal or double catheter along with the avoidance of tight abdominal bandages will decrease the pressure exerted on the abdominal veins which, in turn, will tend to obviate the stasis of blood in the lower extremity. A patient who has recently been operated on should be placed in the head down position immediately on return to his room, because in this position gravity favors the return of venous blood from the lower extremities. This position should be maintained until the patient has recovered sufficiently to contract actively the muscles of his leg and thigh. The head up position, particularly Fowler's position (the patient in the sitting position with the legs flexed on the thighs) must be avoided for the reasons which have already been given. As soon as the patient can do so, active muscular contraction of the calf muscles against a resistance is imperative. I insist on forceful ventroflexion of the foot against resistance many times during the day. In order to increase the return venous flow deep breathing is essential; by increasing the negative pressure within the thorax, the blood flow into the thoracic veins is favored.

Early ambulation of the patient is of importance in decreasing the incidence of venous thrombosis, but simply getting the patient out of bed is not sufficient to protect against venous clotting. In fact, many instances of so-called ambulation actually do more harm than good. Certainly, to allow a patient to sit in a chair with his legs dependent produces greater circulatory stasis in the veins of the lower extremity than that produced if he contracts his musculature actively against a resistance while lying in the horizontal position. If by ambulation it is meant that the patient walks, this will undoubtedly decrease the incidence of venous thrombosis.

Although theoretically the administration of anticoagulants to all patients who were operated on might be of value, I believe that their use is too dangerous to be invoked routinely. In the person who has had previous thromboses and who probably has a thrombosing tendency, heparin or Dicumarol (3,3'-methylene-bis-[4-hydroxycoumarin]) prophylactically might be used immediately after operation. In this way, the possibility of thrombosis could be avoided. In fact, it is my feeling that the use of anticoagulants should be limited largely to patients in this classification. Allen[21] used Dicumarol prophylactically in a series of 101 cases in patients between the ages of 40 and 65. In 3 patients venous thrombosis developed and in 6 there was some hemorrhage which may or may not have been due to the anticoagulant. De Takats[32] has warned that if anticoagulants are used in conjunction with sulfonamides great caution should be exercised, because sulfonamides increase the heparin sensitivity. Similar caution is necessary when anticoagulants are used with neostigmine—de Takats and Fowler[33] Reich and others[34] have also used anticoagulants prophylactically with good results.

ACTIVE THERAPY

The active treatment of venous thrombosis, once the thrombus has occurred, differs according to the type of thrombosis; and the urgency also varies according to the type. In thrombophlebitis in which, as has been mentioned, there is fever, pain and swelling of the extremity, the treatment consists of vasodilatation secured by procaine hydrochloride block of the regional sympathetic ganglions since the symptoms in thrombophlebitis are due to vasospasm. It has been shown both clinically and experimentally that although the lesion in thrombophlebitis is limited to one of the major veins, the symptoms are dependent on associated arteriolar spasm, and that by relieving the spasm, the symptoms quickly subside. The pain is relieved instantly, the temperature falls rapidly and the swelling subsides within a few days. There is a dramatic response to procaine hydrochloride block of the regional sympathetic ganglions in an ill patient who is extremely uncomfortable; the patient is not only relieved of his symptoms but is also spared such persistent manifestations as postphlebitic edema, pain, ulceration and recurrent streptococcic infection. My experience has shown that the relief of pain is complete and permanent in 90 per cent of the patients, whereas in 10 per cent a second block is necessary to give permanent relief. Sixty-five per cent of the patients treated with procaine hydrochloride anesthetization of the regional sympathetic ganglions were fever free within forty-eight hours after the institution of therapy, 24 per cent in three to five days and 7 per cent in six to eight days. In only 4 per cent did the pyrexia last longer than eight days. The edema completely subsided within four days or less in 56 per cent, in from five to eight days in 32 per cent, in from nine to ten days in 8 per cent, and in from eleven to twelve days in 3 per cent. Sixty-two per cent of the patients were discharged from the hospital as cured within four to eight days after the institution of therapy, 19 per cent left the hospital between the ninth and twelfth days, and only 10 per cent remained in the hospital after twelve days. Similar results have been reported by many.[36]

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[30] Duryee, A. W.: Thrombophlebitis: Medical Treatment, Bull. New York Acad. Med. **20:** 604, 1944.

[32] de Takats, G.: The Effect of Sulfa Compounds on Blood Clotting, Surgery **14:** 661, 1943.

[33] de Takats, G., and Fowler, E. F.: The Problem of Thrombo-Embolism, Surgery **17:** 153, 1945.

[34] Reich, C.; Yahr, M. D.; Eggus, C., and Lipkin, D.: Dicumarol in the Prevention of Postoperative Thrombosis and Pulmonary Embolism, Surgery **18:** 238, 1945.

The technic of the sympathetic block of the lumbar ganglions has been described repeatedly.[37] The injection of the first, second, third, and fourth lumbar ganglions, using 5 cc. of 1 per cent procaine hydrochloride into the region of each ganglion gives a satisfactory result. The injection should be performed every twenty-four hours as long as the patient has fever, because fever is an indication of the persistence of the inflammatory process. Although the pharmacologic effect of the drug persists much less than twenty-four hours, it is a well known fact that the physiologic effect of the injection of procaine hydrochloride into the sympathetic nerves lasts considerably longer than the pharmacologic effect.

In all uncomplicated cases of thrombophlebitis or phlegmasia alba dolens, conservative therapy is sufficient and, as exemplified by the results previously given, these patients are well within a short period of time. In the relatively rare case of suppurative thrombophlebitis, which is usually associated with a pelvic inflammatory disease resulting from criminal abortion in which there is liquefaction of the clot with the production of septic emboli, active radical therapy is imperative. Unless the involved vessel proximal to the site of involvement is ligated, septic infarction will continue, resulting in a fatality because of an overwhelming sepsis. In the past there has been considerable controversy among gynecologists concerning the advisability of venous ligation in these instances. The mortality rate has been extremely high because of their ultraconservatism. Miller[40] in 1917 collected 197 cases of puerperal pyemia treated by venous ligation with a gross mortality of 51.6 per cent. Unfortunately, at that time ligation was performed only as a last resort and usually when septicemia was already present. Since then the procedure has been used in many cases, although it has not become popular until recently. Dr. Conrad Collins[36b] of the gynecologic division has shown that the mortality rate in puerperal sepsis after criminal abortion can be greatly decreased by the early ligation of the vena cava and the two ovarian veins. If good results are to be obtained, the operation must be performed early, before sepsis has developed. Twenty-two patients with suppurative pelvic thrombophlebitis have been operated on by the gynecologic staff at Tulane University under the direction of Collins. Of these 22, 20 survived the procedure. One of the 2 fatalities was moribund when operated on and did not survive the operation. The other was admitted to the hospital late in the course of her disease and at the time of operation had extensive pulmonary suppuration. She succumbed six days later to suppurative disease of the lungs. These statistics demonstrate the advantage of radical therapy in suppurative thrombophlebitis and show that the previously accepted extremely poor prognosis in these cases is no longer necessary. Although there is some difference of opinion concerning the method of approach in ligating the pelvic veins in suppurative thrombophlebitis, I am convinced from my experience that transperitoneal ligation of the vena cava just above the bifurcation, together with ligation of the two ovarians, is the preferable method of approach.

With the exception of a suppurative process, the treatment of thrombophlebitis is that of conservatism. On the other hand, the treatment of phlebothrombosis in which the thrombus is not intimately attached to the vein wall and can be readily detached on the slightest exertion, is radical operative therapy in order to prevent the detached thrombus from being carried in the systemic venous system into the heart of the lungs. Although there are many (Barker[40a] and others[41] who believe that all forms of venous thrombosis can be treated by means of anticoagulants, it is my firm conviction that the use of anticoagulants alone in phlebothrombosis is hazardous, because, although the administration of anticoagulants will prevent the formation of additional thrombi, it will certainly not prevent the detachment of those thrombi which are already present. I cannot agree with Barker and his associates[40a] that when a thrombus is diagnosed clinically there is no danger that it may become detached and an embolus may form. As I mentioned before in discussing the symptomatology in phlebothrombosis, I believe that a coagulation thrombus can be detected by careful physical examination. Of course, if one waits until the clot becomes detached and produces pulmonary infarction or if the patient is fortunate enough that the thrombus

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36. (*a*) Leriche, R., and Kunlin, J.: Tratamiento inmediato de la flebitis postoperatorias por la infiltración novocaínica del simpático lumbar, Crón. méd. mex. **33:** 389, 1934. Leriche, R.: Traitement chirurgical des suites éloignées des phlébites et des grands oedèmes non médicaux des membres inférieurs, Bull. et mém. Soc. nat. de chir. **53:** 187, 1927. McPheeters, H. O., and Alexander, H. A.: Lumbar Sympathetic Block and That Postphlebitic Leg, Minnesota Med. **29:** 43, 1946. Nicholson, M. J.: Treatment of Thrombophlebitis by Paravertebral Block, S. Clin. North America **24:** 538, 1944. Aycock, T. B., and Hendrick, J. W.: The Problem of Venous Thrombosis, to be published. (*b*) Collins, C. G., and Nelson, E. W.: Phlebothrombosis and Thrombophlebitis in Gynecology and Obstetrics, paper read before the meeting of the American Gynecological Society, 1946.

37. Ochsner and DeBakey.[3d] Footnotes 29 *a* and *c*.

40. Miller, C. J.: Ligation or Excision of the Pelvic Veins in the Treatment of Puerperal Pyemia, Surg., Gynec. & Obst. **25:** 431, 1917.

40a. Barker, N. W.; Cromer, H. E.; Hurn, M., and Waugh, J. M.: The Use of Dicumarol in the Prevention of Postoperative Thrombosis and Embolism with Special Reference to Dosage and Safe Administration, Surgery **17:** 207, 1945.

41. Crafoord, C., and Jorpes, E.: Heparin as a Prophylactic Against Thrombosis, J. A. M. A. **116:** 2831 (June 28) 1941. Murray, G. D. W.: Heparin in Surgical Treatment of Blood Vessels, Arch. Surg. **40:** 307 (Feb.) 1940. Evans, J. A.: Anti-Coagulant Therapy of Postoperative Venous Thrombosis and Pulmonary Embolism, S. Clin. North America **24:** 534, 1944. Townshend, W. H., Jr., and Honigman, A. H.: Clinical Use of Dicumarol, with an Analysis of Forty Cases, Bull. School Med. Univ. Maryland **29:** 61, 1944. Yahr, M. D.; Reich, C., and Eggers, C.: The Treatment of Thrombophlebitis, Surg., Gynec. & Obst. **80:** 615, 1945. Zucker, H. D.: Clinical Experiences with Dicumarol, J. A. M. A. **124:** 217 (Jan. 22) 1944, de Takats, Trump and Gilbert.[9] Duryee.[20] Reich, Yahr, Eggers and Lipkin.[34]

does not become detached until sufficient inflammatory reaction is formed in the vein to bring on a superimposed phlebitis, the diagnosis can be made without the careful examination. The observation of Hunter and his associates[5] that in 92 per cent of 209 autopsies in which thrombosis of the leg veins was found there was no evidence of phlebitis, is demonstrable proof that a bland thrombus can occur; and since it is not associated with evidence of inflammatory change, it is not fixed to the vein wall. I have repeatedly seen patients who have been treated with anticoagulants over varying periods of time, one for as long as five weeks, in whom there continued to be discharges of emboli which, fortunately, in most instances were not fatal. As mentioned previously, although the administration of anticoagulants will prevent the formation of new thrombi, it will in no way prevent the detachment of those thrombi which are already in existence; a false sense of security in the belief that everything possible is being done by the administration of anticoagulants is likely to lull one into a belief that the patient is in no danger.

Because the thrombus in phlebothrombosis is only loosely attached to the vein wall and can be detached by any slight exertion, it is my belief that immediate surgical intervention should be undertaken as soon as the diagnosis of phlebothrombosis is made. In fact, this condition takes precedence, as far as urgency is concerned, over any other case on the service except that of massive hemorrhage. I have known 2 instances in which a diagnosis of phlebothrombosis was made, but in which the operation was delayed until morning at the time of the regular surgical schedule. In both instances a fatal embolism occurred during the night, before the contemplated procedure was performed. Had the operation been performed at the time the diagnosis was made, these fatalities could have been averted.

Because the administration of anticoagulants will not prevent the detachment of clots (in fact, I know of nothing that will prevent the detachment of the clot), it is my belief that either ligation of the vein above the thrombus or opening the vein and aspirating the thrombus proximal to the opening with ligation below that site is imperative. This should be done bilaterally, because there is bilateral involvement in such a high percentage of the cases. Arthur Allen[21] and his associates at the Massachusetts General Hospital have had the greatest amount of experience with curative and prophylactic ligation for venous thrombosis. In a recent publication he stated that from 1937 to Oct. 1, 1945 1,468 veins were ligated in 816 patients. In this series bilateral ligation has become the method of choice. From 1937 to 1942, 280 veins were ligated in 202 patients; in 39 per cent the venous interruption was bilateral. In 1943, 299 ligations were performed in 165 patients, with 81 per cent bilateral; in 1944, there were 554 ligations in 280 patients, with 97 per cent bilateral, and in 1945, in 169 patients, 335 ligations were performed, of which 98.2 per cent were bilateral. The indications for ligation in the entire group were as follows: signs and symptoms of venous thrombosis in the leg veins, 47.37 per cent; signs of pulmonary infarction, 34.4 per cent, and prophylactic ligation in older persons likely to develop thrombosis, 18.3 per cent. The incidence of prophylactic ligation has increased from 9.2 per cent in 1943 to 25.7 per cent in 1944 and to 36.7 per cent in 1945. Whereas I agree heartily with the Boston group that venous ligation is imperative in phlebothrombosis I do not believe that ligation is necessary in thrombophlebitis except in the rare case of suppurative thrombophlebitis. The patient with nonsuppurative thrombophlebitis can be treated satisfactorily and expeditiously by vasodilation, and ligation in an instance in which the clot is firmly attached is unnecessary. However, to deny a patient with phlebothrombosis the advantage of the thrombectomy or ligation is hazardous because of the likelihood that detachment of the thrombus will produce nonfatal infarction or fatal embolism. Whereas femoral vein interruption is generally a fairly innocuous procedure, it probably should not be performed unless it is absolutely necessary.

The treatment of phlebothrombosis consists of exposure of the femoral vein in the upper end of Hunter's canal. This should be done under local anesthesia. The vein is exposed for approximately 6 cm. below the deep femoral and an incision made in the vein beneath the opening of the deep femoral. If there is free bleeding from the vein proximally, the superficial femoral distal to the profunda is ligated. If there is no free bleeding, a glass cannula is inserted proximally, with the maintenance of a mild suction as the cannula is introduced. In this way, the thrombus which extends proximally into the common femoral and possibly into the iliacs is aspirated. Aspiration is continued until there is free bleeding from the opening in the vein. Subsequent to this, the vein is ligated just above and below the opening. In most instances the involvement is limited to the femoral below the profunda. If, however, there is involvement of the profunda as well as the superficial femoral I believe that both the femoral and the profunda should be ligated. Homans[43] and Fine and Farr[44] have preferred ligation of the iliac to that of the femoral vein because they considered that there is less subsequent edema. Ingraham,[45] because of observations made on autopsy material, expressed his belief that femoral ligation is not sufficient in most cases, and little can be accomplished by it.

SUMMARY AND CONCLUSIONS

Venous thrombosis is a serious complication in both medical and surgical patients.

From the etiologic, pathologic, symptomatologic, prognostic and therapeutic point of view, it is necessary to differentiate between two types of venous thrombosis —thrombophlebitis and phlebothrombosis. Thrombophlebitic organic changes are found in the vessel wall as the result of perivenous lymphangitis produced by bacteria, toxins or an allergy. The thrombus which is the result of changes in the endothelium is firmly fixed to the vein wall. In phlebothrombosis the clot is the result of two major causes; a predisposing one which consists of increased blood coagulability as the result of tissue injury, and a precipitating one which is circulatory stasis. The thrombus is not firmly attached to the vein wall and can be detached easily.

The patient with thrombophlebitis has many manifestations, such as fever, pain, swelling and color changes in the extremity, whereas the patient with phlebothrombosis has few or no symptoms. The prognosis in thrombophlebitis as regards life is good; but unless adequate therapy is instituted postphlebitic sequelae such as edema, pain, ulceration and streptococcic infection are likely. On the other hand, the patient with phlebothrombosis, although apparently not ill, is a potential fatality. The treatment of uncomplicated thrombophlebitis is conservative and consists of vasodilatation accomplished by anesthetizing the regional sympathetic ganglions. Only in rare cases of suppurative thrombophlebitis is radical therapy necessary; this consists of venous ligation proximal to the site of suppurative thrombophlebitis.

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[43] Homans, J.: Deep Clot Venous Thrombosis in the Lower Limb: Preferred Levels for Interruption of Veins, Iliac Section or Ligation, Surg., Gynec. & Obst. **70**: 70, 1940.

[44] Fine, J., and Farr, A.: The Surgical Therapy of Thrombosis of the Deep Veins of the Lower Extremities, Surgery **17**: 232, 1945.

[45] Ingraham, E. S., Jr.: The Distribution of Thrombi in Veins of the Pelvis and Legs in Relation to the Possible Value of Ligation of the Femoral Vein, Canad. M. A. J. **47**: 553, 1942.

Phlebothrombosis, because of the great likelihood that the clot will become detached and produce pulmonary infarction or massive occlusion of the pulmonary artery which will cause sudden death, should be treated without delay by means of venous ligation or thrombectomy. Anticoagulant therapy may be used prophylactically in persons known to have a thrombosing tendency; however, in the treatment of phlebothrombosis it will prevent the formation of additional thrombi but will not prevent the detachment of the thrombus which already exists.

EFFECT OF SEASON AND DUST CONTROL ON COCCIDIOIDOMYCOSIS

CHARLES E. SMITH, M.D.
RODNEY R. BEARD, M.D.
San Francisco
MAJOR H. G. ROSENBERGER
and
MAJOR E. G. WHITING
Medical Corps, Army of the United States

A complete description of the activities of the Commission on Epidemiological Survey of the Board for the Investigation of Epidemic Diseases, Preventive Medicine Service, will be presented in the Surgeon General's History of World War II. It may be mentioned here that a general consultative service was provided, together with standardized coccidioidin and facilities for serologic tests and Coccidioides identification. In conjunction with the Army Air Forces, a detailed epidemiologic investigation was carried out in four army air fields in the San Joaquin Valley, California (fig. 1). These investigations began in July 1941 at Minter and Gardner fields in Kern County, in February 1942 at Merced Army Air Field in Merced County and in March 1942 at Lemoore Army Air Field in Kings County. They continued until three of the fields closed, Gardner in March 1945, Lemoore in October 1945 and Minter in February 1946. On July 1, 1945, when Merced was transferred from the Training Command, the Merced study terminated because it had been shown that coccidioidomycosis was no problem there Actually, Merced served as an unexpected "control."

The intensive epidemiologic investigations were based on coccidioidin testing permanent personnel and at first annually, later semiannually, retesting the negative persons. When the study began, it was not known whether the coccidioidin reactors were also immune, but it was soon apparent that those who reacted did not undergo clinical infections. This immunity was seen both in those who were infected while on the fields and in those who were found to be positive on arrival at the fields. The permanence of immunity will be discussed in a subsequent paper. Likewise, the relatively long duration of coccidioidin sensitivity, comparable to that of tuberculin, will be presented subsequently. When the personnel previously negative were retested, it also became evident that the proportion of completely inapparent or asymptomatic coccidioidal infections was larger than that of clinically recognizable disease.

At approximately monthly intervals permanent personnel who arrived subsequent to the previous visit were coccidioidin tested. Freshly[1] diluted 1 : 100 lot 9 coccidioidin was used throughout the study as a 0.1 millimeter intradermal test. While our other coccidioidins have been standardized against this lot 9, it was felt that using one lot would avoid any question of difference of antigen at the time of the retest. Except for brief periods[2] and at the retest, one person gave the tests and interpreted the results. At the retests, sometimes another of the investigators would test or interpret. However, the permanent tester was working alongside, and the same technics and interpretations were employed. If there was a question, the opinion of the permanent tester was obtained.

Records were kept of all those tested. If clinical coccidioidomycosis occurred, notation was made. At the retest, all who previously failed to react, except those who were known to have had a clinical coccidioidal illness, again were tested. The newly revealed reactors ("change overs") were interrogated regarding illnesses, additional epidemiologic information was obtained, blood for erythrocyte sedimentation rates and coccidioidal serology was drawn and, if possible, pulmonary roentgenograms were taken. The army form 52 A infirmary records and the hospital histories were also checked for suspicious illnesses. Eliminating those originally tested but no longer present at the retest, we grouped the retested persons into the uninfected

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Read before the Section on Preventive and Industrial Medicine and Public Health at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946

From the Commission on [illegible] the Investigation of Epidemic Diseases [illegible] Office of the Surgeon General The spec [illegible] have been conducted in the Department [illegible] University School of Medicine The first five months of the study were supported by a grant from the Rosenberg Foundation This has been a collaborative study Dr Francis G. Blake, chairman of the commission and president of the board, and Brig Gen S Bayne Jones, deputy chief of preventive medicine service, provided invaluable aid and counsel In the Army Air Forces Brig Gen Charles R Glenn while surgeon of the West Coast Training Center and the Training Command and ultimately as deputy air surgeon initiated and maintained Air Force cooperation This was carried through by the surgeons of the Flying Training Command, Col Otis B Schreuder and Col Michael G Healy, and the deputy surgeon, Col Bloyce H Britton, by Col Russel V Lee, chief of professional services at Santa Ana army air base, and by Lt Col Norman Nixon, coccidioidomycosis control office of the Western Flying Training Command, by surgeons of the Fourth Air Force, Col Fabian Pratt and Col. J. R Copenhaver, and the executive officer, Lt Col P M Pederson,

(Footnote continued in next column)

and by the surgeons at the respective fields. Minter, Col John Roberts, Col A L Jennings, Lt. Col E. C Donohoe, Lt. Col Benjamin Siebenthal, Lt Col Roger E Weismann, Major Edward J Hall and Major Maurice Foley, Gardner, Col Robert R. Estill, Col Albert Phillips and Major Robert G McCurdy, Lemoore, Col Edmund H Padden, Col D. D. Fodorovic Lt Col Harris D Joe and Lt Col M S Wessell, and Merced, Col M L Prescott, Col Neill Johnson and Lt. Col A. F. Dorner. The coccidioidomycosis control officers and chiefs of medicine contributed greatly to the study Besides Major Homer G. Rosenberger, these Minter collaborators included Lt Col Russell W. Mapes, Lt Col. Ian B Hamilton, Major Maurice P. Foley and besides Capt E Gale Whiting at Lemoore, Lt. Col J Murray Kinsman and Lt Col. Richard D. Evans These collaborators at Gardner Field were Majors David H. Thurman and Clarence J. Keefe and at Merced, Majors Harvey A. Woods and Harry E Thompson, Capt David C Whitehead The roster of collaborating ward officers is too large to enumerate Special mention should be given the hospital administrative officers who facilitated our work, particularly Chief Warrant Officer Melburn Biddulph at Minter. Key enlisted personnel who arranged for the scheduling and checking at tests included M/Sgt Howard Sehlin at Minter, Pfc. (later Lieutenant) Wilbert M. Fitzpatrick and Sgt C. O. Castledine at Gardner and Sgt. Robert A. Kunde at Merced Many others assisted, including the various commandants, executive officers and Air Force commissioned and noncommissioned officer personnel The post engineers, Major Daniel Eckerman of Minter, Capt Clarence Church of Gardner and Capt Robert H Johnson of Lemoore, worked closely with us, as did Mr. H. J. Cremer and Major Howard B Sprague, Army Air Force liaison officer, at the Ninth Service Command United States Army Engineers

[1] Studies have shown that if it is kept refrigerated and uncontaminated, coccidioidin in a 1 : 100 dilution retains its full potency over two years, at room temperature its potency is retained for well over six months

[2] During the five months from July to December 1941 Dr. E. E. Baker served as an associate in the testing at Minter and Gardner Fields, as did Dr William Kirby during the period from February to April 1942 at Merced Field

(still negative to coccidioidin) and the infected. The infected group included completely inapparent infections and clinically recognizable disease. The latter group included those patients whose histories showed either that their infections were not diagnosed when they were seen by the medical officers (missed cases) or that they did not report for medical care but "toughed it out" (atypical cases). To these undiagnosed cases in which the histories established that the patient had undergone clinical illness which could be allocated to a specific month of onset were added those clinically diagnosed cases still present at the retest.

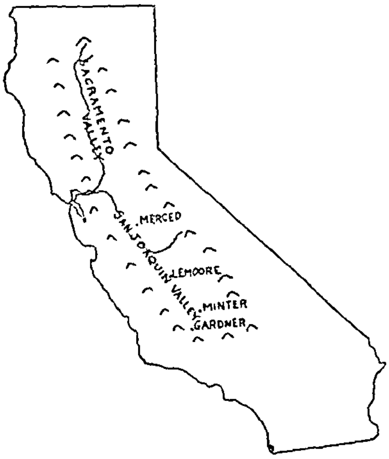

Fig. 1.—Location of the four San Joaquin Valley, California army air fields which were the basis of the coccidioidomycosis study.

The first inquiry which invariably arises concerning coccidioidomycosis is the rate at which infection is acquired. The extremely rapid turnover of personnel made this calculation rather difficult. Of 1,200 nonreactors tested at Minter Field in July 1941, only 221 were present at retest one year later. We found that 52 had undergone infection, a rate of 24 per cent. Actually, this checked closely with 25.1 per cent calculated by the method to be described later. However, there were other years and other fields when the changes were even more drastic and additional calculations became necessary. Moreover, these calculations were imperative in estimating seasonal incidence.

The infection rates for the retested men were calculated as follows (table 1): The "inapparent infections" (column 3) were allocated to the months (column 1) according to the monthly percentage distribution of all clinically recognizable disease occurring in the field regardless of whether the former patients were still on the field (column 2). It was not possible to allocate "inapparent infections" solely on the distribution of those still present who had clinically recognized disease since those still present were frequently so few that the fluctuation would have been like a tidal wave. The estimated "inapparent infections" (column 3) and the clinically recognizable infections present at the retest (column 4) were added to give the total number of infections per month (column 5). Newly tested negatives (column 6) were added to the residual negatives of the previous month (column 7, comprising column 8 minus column 5) to give the total number of those still negative and susceptible (column 8). The infection rate per 100 men (column 9) was calculated by dividing all infections (column 5) by total susceptibles (column 8). The monthly rates were then added to give the annual rate. It is to be observed that at Merced, where no clinically diagnosed infections were ever found to have been acquired on the field, it was impossible to calculate monthly infection rates. The annual infection rates were estimated by taking the number of coccidioidin negatives at the midpoint between the retests.

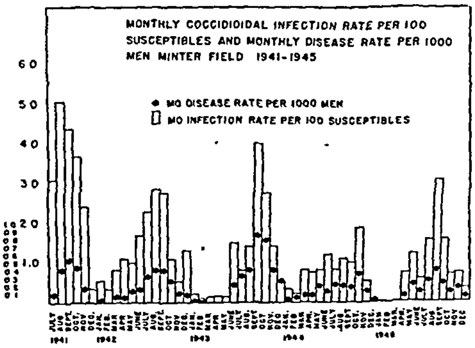

Fig. 2.—Monthly coccidioidal infection rate per 100 susceptible persons and monthly disease rate per 1,000 men at Minter Field, 1941 to 1945.

In table 2 are presented the monthly infection rates per 100 susceptible persons at Minter, Gardner and Lemoore together with the monthly precipitation in inches at the U. S. Department of Commerce Weather Station, Kern County Air Port, Bakersfield, Calif. For comparison the Minter Field monthly disease rate per 1,000 men field strength (total Army population on the field) is also given. The latter differs from the War Department records in that casuals were omitted and cases were allocated to month of onset rather than month when diagnosed. Figure 2 depicts the Minter Field infection rate per 100 susceptible persons and this monthly disease or case rate based on field strength. One notes the extremely poor monthly association. Indeed, the third coccidioidal season produced monthly disease rates higher than did the first, although calculated infection rates were significantly less. Figure 3 compares the monthly infection rates at Minter, Gardner and Lemoore, while figure 4 compares the monthly incidence at Minter Field with the monthly rainfall.

Table 1.—*Example of Method of Calculating Monthly Coccidioidal Infection Rates, Minter Field, 1941 to 1942*

Inapparent Infections Distributed According to Monthly Incidence of Clinically Recognized Cases July 1941 to June 1942

Month	% Distribution of All Clinically Recognizable Cases*	Inapparent Infections	Clinically Recognizable Infections Present at Retest	All Infections	New Negatives	Previous Negatives Still Negative (8)—(5) of Previous Month	Total Susceptibles; (6)+(7)	Infection Rate per 100; (5)÷(8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
July	4.8	5	2	7	221	0	221	3.17
August	10.7	12	7	19	157	214	371	5.12
September	16.7	19	5	24	186	352	538	4.46
October	16.7	19	7	26	206	514	720	3.75
November	11.8	13	6	19	78	694	772	2.46
December	1.2	1	2	3	0	753	753	0.40
January	3.6	4	2	6	321	750	1,071	0.56
February	2.4	3	1	4	0	1,065	1,065	0.38
March	3.6	4	6	10	82	1,061	1,143	0.88
April	8.3	10	7	17	326	1,133	1,459	1.17
May	8.3	10	5	15	0	1,442	1,442	1.04
June	11.9	13	15	28	206	1,427	1,633	1.71
Total	100.0	113	65	178	1,783			25.10

* There were 84 clinically recognizable cases of coccidioidal infection.

In table 2 the annual coccidioidal rates are presented for Minter, Gardner, Lemoore and Merced. Again one observes the inapplicability of the usual disease or case rate based on field strength. If one merely takes the average field strength for the year as a whole as the basis of computation, the results are even farther out of line. One fact is outstanding. Minter and Gardner, in the southern part of the San Joaquin Valley, have exceedingly high rates. In their first year with dust uncontrolled, 1 out of every 4 or 5 susceptible persons was infected. Lemoore, 50 miles to the north, had half or less while Merced, another 75 miles north, had a negligible amount. Many of the "inapparent infections" detected at Merced were in men who had traveled into the southern part of the San Joaquin Valley. The Merced 1944-1945 calculations were complicated by the fact that at the time of the retest, Feb. 6, 1945, a considerable portion of the field personnel had migrated to Gila Bend, Ariz., because the land fogs in the San Joaquin Valley interfered with the training schedule. In the 728 previously negative persons who did not go to Gila Bend, the infection rate was only 0.5 per cent (essentially the same as in the previous two years). However, of 204 susceptible persons who went to Gila Bend January 6 to February 19, 4.8 per cent were found to be infected. Certainly the pattern of increased coccidioidal endemicity in the southern part of the San Joaquin Valley with a decrease as one proceeds northward is remarkably clear together with the implication of a high rate of incidence in Arizona.

The outstanding importance of dust in coccidioidomycosis is also apparent. Dust has been repeatedly [3] commented on as constituting the vehicle of "natural" infection. Coccidioidal chlamydospores are readily wafted in the air. The coccidioidal sporangia ("spherules") are infective when they are introduced into an animal's tissues.[4] However, they are much larger and do not constitute part of the infection chain unless, as Emmons hypothecates,[5] infected rodents die and their bodies furnish a medium in which the myceliums develop and infect the soil. Cattle,[6] sheep [6b] and dogs [7] as well as rodents and man are infected from the dust. When susceptible human beings stir up dust in highly infected areas, veritable epidemics occur.[3c, d] The seasonal characteristics of coccidioidal erythema nodosum ("valley fever") have been noted,[3b] but table 2 and figure 4 show this association with even greater clarity.

Table 2.—*Annual Coccidioidal Rates in San Joaquin Valley Army Air Fields and Precipitation at Bakersfield, Calif., 1941 to 1945*

Year	Precipitation Previous Rainy Season	Minter (7/1 to 6/30) Disease Rate per 1,000 Men (Field Strength)	Minter (7/1 to 6/30) Infection Rate per 100 Susceptibles	Gardner (7/1 to 6/30) Infection Rate per 100 Susceptibles	Lemoore (3/1 to 2/28) Infection Rate per 100 Susceptibles	Merced (2/1 to 1/31) Infection Rate per 100 Susceptibles
1941-42	10 96	2.16	25 10	20 99		
1942 43	5 04	1 81	11 51	11 57	12.43	0 63
1943-44	9 64	3 89	15 61	13 58	6 21	0 36
1944 45	5 36	1 68	8 43	7.02*	2 86	1.4†
1945	7 36	1.34‡	8.35‡		1 43§	

* Gardner, July to November

† Merced affected by Arizona exposures. See text.

‡ Minter, July to December

§ Lemoore, March to September.

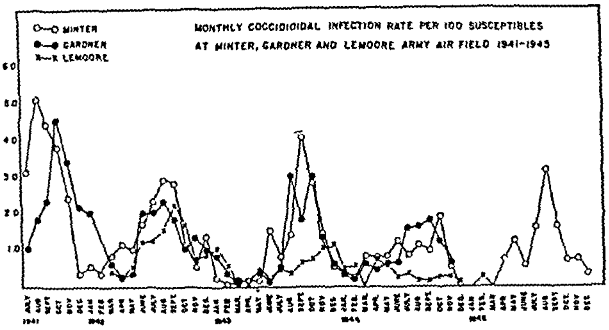

Fig. 3—Monthly coccidioidal infection rate per 100 susceptible persons at Minter, Gardner and Lemoore army air fields, 1941 to 1945.

Recalling that the incubation period of coccidioidal infection is eight to twenty-one and possibly thirty days,[3b, c] one observes that the effect of rainfall is reflected not only in the month when the rain occurs but also in the succeeding month. The incidence is maximal in the dry summer and autumn, minimal during the winter and spring. The only exception in the data presented is in the Lemoore 1944 season (fig. 3). However, in June 1944 Lemoore changed from an active dust-raising training field to a much more sedentary processing center.

In the fall of 1941 when Minter and Gardner were being built there were extensive scarred surfaces and the dust billowed in clouds. That season of maximal dust provided the highest coccidioidal rates of the study (tables 2 and 3, figs. 2, 3 and 4). In the month of August 1941 over 5 per cent of the susceptible Minter Field personnel were infected.

The following year lawns were planted, roads were paved, air strips both at the main and auxiliary fields were hard-surfaced and the incidence of coccidioidal infections was cut in half. It may be noted (table 2) that the winter preceding the 1941 coccidioidal season had twice the rainfall of the succeeding winter, while the winter preceding the 1943-1944 season was another rainy one (for the San Joaquin Valley). There was an increase in coccidioidal incidence at both Minter and Gardner, suggesting that a wet winter season may aid in the multiplication of the fungus in nature, by whatever means this is accomplished. The immediate beneficial effect of rain in keeping the chlamydospores from blowing about in the air is obvious. Admittedly, the effect of heavy winter rainfall in providing abundant chlamydospores for inhalation in the succeeding summer is hypothetic.

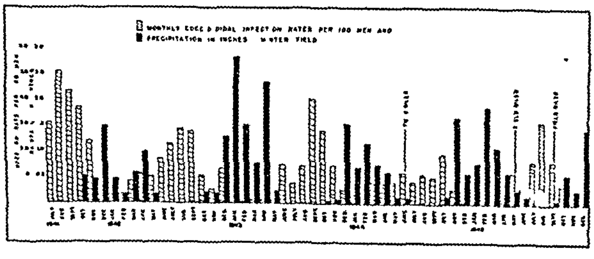

Fig. 4—Monthly coccidioidal infection rate per 100 susceptible persons and precipitation in inches at Minter Field, 1941 to 1945.

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3. (*a*) Ophüls, W., in discussion of papers by Cummins, Smith and Halliday and Pulford and Larson, J. A M. A. **93**: 1055 (Oct 5) 1929. Dickson, E C, and Gifford, M. A: Coccidioides Infection (Coccidioidomycosis): II. The Primary Type of Infection, Arch Int. Med. **62**: 853 871 (Nov) 1938 (*b*) Smith, C. E The Epidemiology of Acute Coccidioidomycosis with Erythema Nodosum ("San Joaquin" or "Valley Fever"), Am J. Pub Health **60**: 600 611 (June) 1940. (*c*) Davis, B. L.; Smith, R. T., and Smith, C. E An Epidemic of Coccidioidal Infection (Coccidioidomycosis), J. A. M. A **118**: 1182-1186 (April 4) 1942. Goldstein, D. M, and Louie, S: Primary Pulmonary Coccidioidomycosis Report of an Epidemic of Seventy Five Cases, War Med **4**: 299-317 (Sept.) 1943 (*d*) Willett, F. M, and Weiss, A · Coccidioidomycosis in Southern California: Report of a New Endemic Area with a Review of One Hundred Cases, Ann Int. Med. **23**: 349 375 (Sept) 1945.

4. *Rixford, E.*: Report of a Case Presented Before the San Francisco Medico Chirurgical Society, March 5, 1894, Occidental M. Times **8**: 326 (May) 1894.

5. Emmons, C. W.: Isolation of Coccidioides from Soil and Rodents, Pub. Health Rep **57**: 109-111 (Jan. 23) 1942.

6 (*a*) Giltner, L. T.: Occurrence of Coccidioidal Granuloma (Oidiomycosis) in Cattle, J. Agric Research **14**: 533 541 (Sept. 16) 1918. (*b*) *Beck, M. D.*. Occurrence of Coccidioides Immitis in Lesions of [illegible] Proc Soc Exper. Biol. & Med **26**: 534-536 [illegible] k, M. D; Traum, J, and Harrington, E S: [illegible] Occurrence in Animals, Reference to Skin Tests, [illegible] 1: 490 499 (April) 1931 Davis, C. L.; Stiles, G W., and McGregor, A. W.: Coccidioidal Granuloma in Calves, ibid. **45**: 562-563 (April) 1938

7. Farness, O. J.: Coccidioidal Infection in a Dog, J. Am. Vet. M. A. **97**: 263 264 (Sept.) 1940.

The pattern of maximal incidence in the first year of operation of the fields was seen at Lemoore. As table 2 indicates, the second year of operation at Lemoore provided an infection rate just one half that of the first season despite the fact that this was a heavy coccidioidal season, as indicated by an increase over the previous year both at Minter and at Gardner. The improvements in local dust control more than offset more favorable conditions for Coccidioides.

TABLE 3.—*Monthly Incidence of Coccidioidomycosis in San Joaquin Valley Army Air Fields and Monthly Precipitation* in Inches, 1941 to 1945*

Date		Precipitation	Monthly Disease Rate per 1,000 Men, Minter	Monthly Infection Rate per 100 Susceptibles		
				Minter	Gardner	Lemoore
1941	July	0.00	0.10	3.17	1.08	.
	August	Trace	0.41	5.12	1.89	.
	September	0.00	0.55	4.47	2.39	
	October	0.53	0.45	5.75	4.60	.
	November	0.49	0.17	2.47	3.44	..
	December	1.54	0.00	0.38	2.22	.
1942	January	0.47	0.03	0.56	2.06	.
	February	0.19	0.00	0.35	0.00	.
	March	0.60	0.07	0.88	0.63	0.40
	April	1.03	0.06	1.17	0.29	0.23
	May	0.19	0.15	1.04	0.37	0.53
	June	0.00	0.17	1.71	2.02	1.27
	July	0.00	0.34	2.32	2.06	1.24
	August	0.01	0.42	2.93	2.35	1.55
	September	0.00	0.41	2.84	1.85	2.24
	October	0.24	0.29	1.14	1.03	1.70
	November	0.20	0.11	0.58	1.38	0.73
	December	1.33	0.10	1.39	1.00	0.84
1943	January	2.87	0.02	0.22	0.87	1.12
	February	1.55	0.04	0.07	0.39	0.58
	March	0.80	0.00	0.13	0.15	0.60
	April	2.39	0.00	0.19	0.00	0.08
	May	0.25	0.00	0.18	0.37	0.41
	June	0.00	0.23	1.52	0.12	0.16
	July	Trace	0.35	0.61	0.57	0.47
	August	0.00	0.43	1.45	3.09	0.39
	September	0.00	0.87	4.10	1.86	0.69
	October	0.05	0.81	2.85	3.04	0.75
	November	0.09	0.41	1.49	1.46	1.04
	December	1.58	0.28	0.53	0.62	1.17
1944	January	0.71	0.05	0.34	0.31	0.50
	February	1.18	0.06	0.22	0.20	0.55
	March	0.76	0.10	0.86	0.65	0.00
	April	0.63	0.10	0.80	0.46	0.75
	May	0.23	0.21	0.88	0.65	0.59
	June	0.11	0.15	1.28	0.67	0.21
	July	0.00	0.24	0.89	1.60	0.35
	August	0.00	0.22	1.15	1.69	0.16
	September	0.00	0.20	1.05	1.82	0.14
	October	0.14	0.39	1.96	1.27	0.28
	November	1.70	0.15	0.54	0.64	0.27
	December	0.60	0.03	0.05	.	0.13
1945	January	0.82	0.00	0.00	..	0.00
	February	1.91	0.00	0.00	...	0.24
	March	1.15	0.00	0.00		
	April	0.64	0.09	0.77		
	May	0.26	0.22	1.29		
	June	0.14	0.12	0.60		
	July	0.00	0.29	1.62		
	August	Trace	0.41	3.20		
	September	0.07	0.25	1.65		
	October	0.58	0.14	0.71		
	November	0.28	0.18	0.79		
	December	1.48	0.07	0.38		

* Precipitation data from U S Department of Commerce Weather Station, Kern County Air Port, Bakersfield, Calif

After the relatively severe coccidioidal season of 1943-1944 at Minter and Gardner fields, concerted action was taken on other phases of dust control. The Board for the Investigation of Epidemic Diseases requested us to direct our attention to the problem. It was also receiving urgent study by the Air Surgeon's Office. At the fields the commandants, post surgeons, post engineers and Coccidioidomycosis Control Officers were working on the problem. With the encouragement and backing of Washington and the Ninth Service Command and Training Command, they took energetic steps.

It was recognized that in highly endemic areas coccidioidomycosis is bound to occur even if local dust control is reasonably effective. Dust blows in from areas surrounding an installation. Personnel do not stay on a post continuously. However, surfacing the roads, grassing the grounds and compelling personnel to use surfaced roads and walks rather than permitting them to wear away grassed areas and lawns greatly reduce the amount of local dust. The Pacific Division of Ninth Service Command U. S. A. Engineers prepared an excellent treatise on agronomy in passive protection from dust.

Two additional steps were taken. More swimming pools were constructed so that, as much as was possible, aquatics were substituted for other forms of exercise. Indeed, the principal areas left without turf were fields used for calisthenics, baseball, volley ball and other forms of physical training. Some of these areas had an asphalt (blacktop) surface, but asphalt is not only expensive but also hard on feet during the extremely hot weather.. The use of crushed rock and gravel was out of the question because of injuries which would ensue. These activities could not be abandoned completely, while control of dust in those areas seemed especially important since with exercise there is deeper breathing and an increase in the amount of air actually inspired. Therefore, an attempt was made to control the dust by the use of oil. Crude oil forms a crust which breaks up in lumps. Moreover, unless it is highly refined oil stains skin and clothing and is apt to be irritating. However, a number of highly refined oils are available. Such oil penetrates the upper inch of soil, impregnating the particles of dirt. Then even if the treated soil breaks up into dust and is scuffed, the oiled particles fall back to the ground instead of being blown about in clouds.

Accordingly, in May 1944, both Gardner and Minter fields embarked on the use of oil for athletic areas. Gardner's first attempt in early May was unsuccessful. Initially it was thought the failure was due to a preliminary disking. While it is true that the more heavily the soil is packed the better, the major fault proved to be in the character of the soil. Gardner Field was built on the fine silt of an old lake bottom. Even with a second, heavier application in June, the oil crust broke through and unoiled dust was exposed.

The soil at Minter Field, heavier and with more clay, proved more suitable. Preliminary tests were run on volley ball courts to estimate oil dosage. It was observed that 1 quart of oil per square yard was optimal. The oil was applied in late May and early June. While the dust control was only moderately effective at Gardner Field for a few weeks after each oil application, at Minter Field it seemed reasonably satisfactory until October Fortunately, as it was wearing off, late October rains terminated the coccidioidal season.

The effect of the oiling is seen in table 3 and figures 3 and 4. It is to be recalled that oil was applied to Gardner Field in early May and again in late June 1944, while athletic areas at Minter were oiled in late May and early June 1944. Also, by October the effect of oiling had largely worn off at Minter. The low incidence at Minter may be partially attributed to the preceding dry winter; however, not only was the Minter rate the lowest in its experience but also, for the first time, the June through November rate was below that of Gardner. During that six month period the infection rate at Minter was 6.87 per 100 susceptible persons, while that at Gardner was 7.69. Although this difference is not spectacular, in 1943 the same six months provided a 12.22 infection rate at Minter compared with that of 10.14 at Gardner. In 1942 the rate was 11.52 at Minter and 10.68 at Gardner. During the five months July through November 1941, it was 18.98 at Minter and 13.40 at Gardner. During 1942 and again in 1943 the Minter rate exceeded the Gardner rate in four of those six months; in 1944 the Gardner rate exceeded Minter in four of the six months. Minter was below the Gardner rate only this one season when oiling succeeded at Minter and failed at Gardner.

Another item of evidence was available. In the six months of summer and autumn of 1943, the Minter Field medical detachment enlisted personnel suffered 15 coccidioidal infections. The number of susceptible persons was an even 100, so the infection rate was 15 per 100 men. Athletic fields were behind the station hospital, with the barracks of the enlisted men directly at the edge of the athletic areas. In the same period of 1944 only 2 infections were acquired. Forty-two of those persons originally negative at the beginning of the six months were still present at the retest. The infection rate calculates to 5 per 100 men. Admittedly, the numbers are small, but the trend coincides with the rest of the evidence.

The closing of Gardner Field eliminated subsequent comparison. However, the 1945 experience at Minter provided additional evidence. After a record-breaking initial three months without any infections, cases appeared in April and by mid-May were increasing rapidly. The post engineer acceded to the pressure and began the application of oil on May 20. He had been reluctant because he feared late rains and knew that rains would render the oil less permanent. His fears were justified, for only a week after the oil was applied it began to rain and rained a total of 0.33 inch. The combination of oil and rain did drop the coccidioidomycosis, but because the rain had interfered with the durability of the oiling, by August the areas were extremely dusty. August provided a rate nearly twice that of any month in 1944 and exceeded only once since 1941. Oil was reapplied the first week in September with immediate cessation of coccidioidomycosis.

The most dramatic tribute to the efficacy of the Minter dust control was a comparison with members of two camps of agricultural workers in the same region. Only clinically diagnosed, hospitalized cases could be compared, but with the availability of diagnostic facilities at Minter Field it is conservative to consider that the clinical diagnoses were made with as great care and our Army personnel were hospitalized in no greater proportion than were the agricultural workers. Within a two month and ten day period extending from June into August, 22 Minter Field personnel were hospitalized for coccidioidomycosis compared with 150 agricultural workers. The field strength at Minter was approximately 3,400, while there were only 1,500 agricultural workers.

Working with different data, Major Howard B. Sprague has assembled decidedly convincing evidence of the beneficial effect of dust control on coccidioidal incidence.[8] One of his most telling items was a comparison of the incidence of coccidioidomycosis at Davis-Monthan Field and at Marana Army Air Base. Both fields are located near Tucson, Ariz., and have comparable soil and climate. Until 1944 the incidence of coccidioidomycosis was similar. In that year dust continued unabated at Marana and coccidioidomycosis soared in the summer and autumn. However, strict dust control was inaugurated at Davis-Monthan early in 1944. These measures were successful and were followed by almost complete elimination of hospital cases of coccidioidomycosis during the summer and autumn.

COMMENT

The seasonal infection rate of coccidioidomycosis again evinces that dust is the mechanism by which the fungus is transported. Even where the coccidioidal infection rate is 5 to 10 per cent per year, it is easy to understand why most of the long-time inhabitants have been infected. It is doubtful if a community in such an area could profitably essay complete dust control in order to prevent coccidioidomycosis among its citizens. However, lawns, parks, paved roads and dust-free playgrounds are pleasant, especially in the hot regions where Coccidioides flourishes. Certainly, sanatoriums located in coccidioidal endemic areas to take advantage of the warm dry climate should have the benefit of dust control measures.

In the special conditions which prevail in army camps in coccidioidal areas, where large numbers of susceptible persons are being introduced and those infected are departing as fast as they are becoming immune, local dust control seems warranted. Whenever feasible, grassing should be used. The surfacing of roads and, to a limited degree, that of athletic areas is important. However, many athletic areas cannot be surfaced because of heat on the feet and the danger of injuries after falls. If turf cannot be maintained on the areas, the application of a highly refined oil may be tried. However, one should first examine the character of the soil. If the soil is a fine loose silt like that of Gardner Field, success is unlikely. If it is a heavy adobe type, the outlook is favorable. In any event, one should run preliminary tests to prove effectiveness, to decide on the product to be used and to fix the quantity to be applied. In addition, every effort should be made to develop an aquatic physical training program during the suitable hot months, which will correspond with the season of high coccidioidal exposure.

SUMMARY

The monthly and yearly rates of coccidioidal infection were calculated in susceptible (coccidioidin negative) personnel of four San Joaquin Valley army air fields. The results emphasized the geographic distribution of the endemic area and the importance of dust in infecting man with Coccidioides immitis. At the most northerly station the annual infection rate was only 0.5 per 100 susceptible persons compared with 20 to 25 at the two southerly fields when dust was uncontrolled. Maximal incidence occurred in the arid dusty summer and autumn, a single month providing 5 per cent of the infections. Grassing, paving roads and runways and ultimately the use of highly refined oil on athletic areas were important dust control measures. This control reduced infection rates from one half to two thirds.

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[8] Sprague, H. B.: Summary of the Relation Between Occurrence of Dust and Incidence of Coccidioidomycosis (Valley Fever) at Army Air Fields in California and Arizona, Memorandum to Army Air Force Headquarters, Oct. 1, 1945.

2330 Clay Street, San Francisco 15.
2330 Clay Street, San Francisco 15.
636 South Painter Street, Whittier, Calif.
2298 Durant Avenue, Berkeley 4, Calif.

ABSTRACT OF DISCUSSION

Dr. Russell V. Lee, San Francisco: Dr. Smith and his associates know more about coccidioidomycosis than any one else, and this work with the Army Air Forces and Ground Forces was a most remarkable piece of combined epidemiology and curative medicine. They surveyed every man in that important military area, important because most of the training fields for the Army Air Forces were located within the area where coccidioidomycosis is prevalent. Dr. Smith was of great help in outlining the problems which might be encountered, and one type threatened to be a considerable menace. It was shown in the paper that dust control could remarkably reduce the incidence of the disease in an area where, left alone, in a year or two the incidence of infection would increase remarkably, and after a number of years' residence in the area we were practically 100 per cent uninfected with coccidioidomycosis. While the mortality was very low, it was the principal cause of hospitalization in many of the Air Force hospitals in that southwest area, so that anything that can be done to reduce it under such circumstances should be done. The incidence under military conditions, particularly under air conditions, was very high. The airplane propeller picks up a lot of dust; soldiers around camps and marching in physical training kick up a lot of dust, and they have become infected at a terrific rate. There was a hospital at San Benito where about one fourth of the men of one detachment were hospitalized and thus saved from going back to this exceedingly dusty region right in the middle of the season of highest incidence. This has lessons for civilian application. This whole desert area has been outlined now largely by the work of Dr. Smith. He can draw a very accurate line around the endemic area of coccidioidomycosis. It is a much larger area than was ever dreamed of before, and when certain types of activities are going to be carried out in that area certain precautions will have to be adopted to protect against coccidioidomycosis. For instance, we had Negro troops in that area, and the Negro is many times more susceptible to coccidioidomycosis than the white man. Negroes should be kept out of that area and the dusty occupations there. It is definitely a hazard for them, judging by the army experience there. In due time there is going to come from Dr. Smith's work the most comprehensive, complete definition of the clinical features as well as the epidemiologic features of coccidioidomycosis. The knowledge of this disease is exactly 50 years old, but in the last five years the whole thing has crystallized. Papers and monographs undoubtedly will appear shortly as a result of this army experience, and this disease is going to be defined with a precision with which it has never been defined before.

Postwar Malaria.—In continental United States civilian malaria in the aggregate is at an all time low; there has been little perceptible change in the past five years. Available data show a marked decrease in malaria rates among continental military personnel since 1941, but in these figures is reflected the extensive control programs in military areas. The cyclic upswing predicted for the early forties by some malariologists has not occurred. In the past two decades reported malaria mortality and morbidity have dropped 85 per cent and 70 per cent respectively.—Hollis, Mark D.: Postwar Malaria Control in Continental United States, *J. Nat. Malaria Soc.*, June 1946.

RADIOACTIVE IODINE THERAPY

Effect on Functioning Metastases of Adenocarcinoma of the Thyroid

S. M. SEIDLIN, M.D.
L. D. MARINELLI, M.A.
and
ELEANOR OSHRY, B.S.
New York

Therapy of neoplastic disease usually consists of two phases: first, the treatment of the primary focus and, second, that of metastases. Specifically, in adenocarcinoma of the thyroid, the primary site together with its immediate extensions is conventionally treated by surgery, radiation or both. Distant metastases, if treated, are usually subjected to palliative external irradiation. This paper is a report of successful therapy of a case of metastatic adenocarcinoma of the thyroid treated by the principle of specific internal irradiation *with radioactive iodine.*

The earliest study of the uptake of radioactive iodine in 2 cases of carcinoma was reported by Hamilton and his associates[1] in 1940. In 1942 he described 2 more cases[2] in which tracer doses of radioactive iodine had been given to the patients prior to the removal of carcinomatous thyroids. Radioautographs of the excised glands showed no significant deposition of the radioactive iodine in malignant areas in any of these cases.

In April 1942, Keston, Ball, Frantz and Palmer[3] reported the first positive evidence of pickup of the radioactive iodine by a metastasis from a carcinoma of the thyroid. In a patient with multiple lesions, Geiger counter measurements showed appreciable uptake of radioactive iodine in only one of the metastases. Subsequently, from the autopsy, these authors[4] reported that "the bulk of the metastatic tissue was undifferentiated. The metastasis which showed consistent uptake of iodine was the only one which grossly resembled thyroid tissue and which, microscopically, showed chiefly well differentiated tumor."

Leiter, Seidlin, Marinelli and Baumann[5] in a report of 2 cases (1 of which is the subject of the present paper) of hyperthyroidism due to adenocarcinoma of the thyroid and to functioning metastases showed that the effect of thiouracil on the basal metabolic rate, plasma cholesterol, blood iodine and excretion of radioactive iodine in these patients was in every respect

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From the Medical Division and Department of Medical Physics of the Montefiore Hospital and the Physics Department of the Memorial Hospital.

A preliminary report of this work was presented at the Clinical Research Meeting of the New York Academy of Medicine on May 16, 1945.

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The cooperation of the staffs of the Massachusetts Institute of Technology and Washington University cyclotrons and of Dr. R. D. Evans made this work possible.

Dr. Louis Leiter, Chief of the Medical Division of Montefiore Hospital, gave valuable assistance throughout this work, as did Dr. David Marine and Dr. S. H. Rosen in the field of thyroid pathology and Dr. E. J. Baumann in iodine chemistry. Dr. Solomon Fineman reviewed the roentgenograms. Valuable technical assistance was rendered by Elizabeth F. Focht, Ruth Hill, George Ross, Louella Tulip and Dr. A. A. Yalow.

[1] Hamilton, J. G.; Soley, M. H., and Eichorn, K. B.: Deposition of Radioactive Iodine in Human Thyroid Tissue, Univ. California Publ., Pharmacol. **1**: 339-368, 1940.

[2] Hamilton, J. G.: The Use of Radioactive Tracers in Biology and Medicine, Radiology **39**: 541-572 (Nov.) 1942.

[3] Keston, A. S.; Ball, R. P.; Frantz, V. K., and Palmer, W. W.: Storage of Radioactive Iodine in a Metastasis from Thyroid Carcinoma, Science **95**: 362-363 (April 3) 1942.

[4] Frantz, V. K.; Ball, R. P.; Keston, A. S., and Palmer, W. W.: Thyroid Carcinoma with Metastases: Studied with Radioactive Iodine, Ann. Surg. **119**: 668-669 (May) 1944.

[5] Leiter, L.; Seidlin, S. M.; Marinelli, L. D., and Baumann, E. J.: Adenocarcinoma of the Thyroid with Hyperthyroidism and Functional Metastases: I. Studies with Thiouracil and Radio-Iodine, J. Clin. Endocrinol. **6**: 247-261 (March) 1946.

similar to the response already described[6] in the literature on ordinary thyrotoxicosis or hyperthyroidism. This indicates that thiouracil suppresses hormone production by functioning metastases from adenocarcinoma of the thyroid as readily as it inhibits this process in the hyperplastic thyroid of ordinary hyperthyroidism.

Since [illegible] thyroid cell, normal or malignant [illegible] between inert and radioactive iodine, we are utilizing the normal affinity of this cell for iodine as a method of "selective irradiation" of a type of carcinoma of the thyroid. We now report the results of three years' study of the therapeutic effect of radioactive iodine in 1 case of metastatic carcinoma of the thyroid, in which all demonstrable metastases were shown to pick up radioactive iodine.

Radioactive iodine, as used in this and similar studies, consists of a mixture, in varying proportions, of two isotopes, I^{131}, half life 12.6 hours, and I^{131}, half life 8.0 days, prepared in a cyclotron by the bombardment of tellurium with deuterons. These two isotopes are chemically identical with stable iodine and cannot be separated by ordinary chemical or physiologic methods and processes. Both I^{130} and I^{131} emit beta rays (high speed electrons) which cause intense ionization within a few millimeters of tissue, as well as gamma rays which cause a negligible amount of ionization within the body and are sufficiently penetrating to be detected readily by an external Geiger counter.

REPORT OF CASE

Observations Prior to Radioactive Iodine Therapy.—Thyroidectomy: B. B., a man aged 51, had in 1923, at the age of 30, undergone a thyroidectomy because of substernal goiter and pressure symptoms on the trachea. He had no thyrotoxicosis. The histologic diagnosis was "malignant adenoma."

Pathologic Report: The pathologic report gave a gross description of three pieces of tissue received. The first one measured 5 by 5 by 3 cm. It was firm in consistency, and the cut section showed a fairly dense central core of connective tissue. No cystic or hemorrhagic areas were observed. The outer portion of the section disclosed a brownish yellow semipurulent material. The remaining two pieces of tissue were relatively the same in general structure but averaged about 2.5 cm. in thickness.

On microscopic examination, sections of the goiter showed no normal structures. Sections of tissue revealed definite fibrous change and there was an abundant pinkish hyaline-like stroma manifesting cell formation. There was a definite, highly atypical epithelial overgrowth which showed abundant growth and a tendency toward cord formation. In these areas no acini resembling the normal were seen. The nuclei of the cells took a rich blue stain. The growth showed no definite capsule surrounding it. Areas showing cartilage formation were present. No hemorrhage or infection was observed.

Recurrence and Laminectomy: Postoperatively there were no symptoms of hypothyroidism. The patient was in apparent good health for fifteen years. Then there developed palpitation, nervousness, loss of weight and signs typical of hyperthyroidism. In addition, *severe pains developed in the lower back* and radiated down the legs. On examination at another hospital in October 1939, a small pulsating tumor was found in the midline of the back at the level of the twelfth thoracic vertebra. Visualization by injection of diodrast showed the tumor to be extradural and extraosseous. Roentgenograms of the skeleton revealed no osseous lesions. The basal metabolic rate was + 40 per cent. A laminectomy was performed in November 1939. The tumor proved to be *a metastatic carcinoma of the thyroid* (fig. 1).

The histologic report revealed that the slide[7] showed several large ragged fragments of tissue, one of which contained spicules of bone and consisted of irregular cellular areas formed by broad hyalinized stroma bands. The general pattern was the same in all portions and consisted of irregular, often elongated, closely packed follicles with infoldings of the lining epithelium which varied from cuboidal to low columnar. There was no well formed stroma. Traces of granular colloid-like material were present in some follicles. In some areas the follicles appeared to have atrophied leaving the hyalinized-like bands previously mentioned. There were large areas of necrosis and some foci of hemorrhage. No mitosis was seen. The nuclei were fairly regular, dark and vesicular. The diagnosis was metastatic adenocarcinoma of the thyroid.[8]

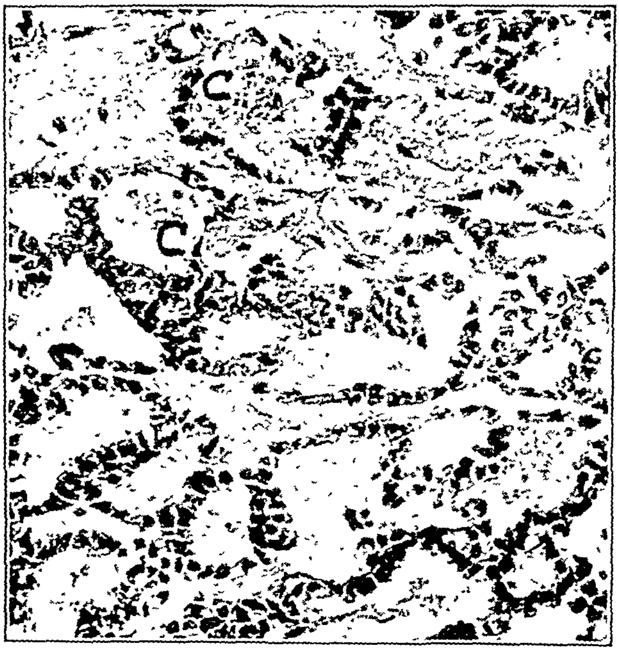

Fig. 1.—Photomicrograph of metastatic tumor in the twelfth thoracic vertebra magnified 400 times. Note follicular architecture and traces of granular colloid like material (*c*) in some follicles.

Treatment and Course: A thyroid crisis developed postoperatively. A few weeks later an exploratory operation was performed in the region of the thyroid and no thyroid tissue, normal or malignant, was found. Because of continuing pain, physiotherapy was given to the patient. In the next two years the symptoms and signs of hyperthyroidism increased. In December 1941 the basal metabolic rate was + 45 per cent. In addition, roentgen ray films of the lungs revealed "numerous circular deposits in the lower lobe on the left side and in the cardiohepatic angle on the right side, strongly suspicious of metastatic lesions." There was also radiographic evidence of destruction of the right upper femur (1.0 by 2.0 cm.) and the second rib on the left side. A gastrointestinal roentgenologic series was negative. A film of the pelvis taken at this time was reported negative for metastases, but our subsequent review (1946) of the plate revealed a small area (0.6 by 1.8 cm.) of early destructive changes in the inner border of the left ileum, above the acetabulum, just below the incisura ischiadica major. From December 1941 to February 1942 high voltage roentgen therapy was administered[9] as follows: dorsolumbar spine, 4,060 r; right upper femur, 3,180 r delivered through three fields. This course of therapy did not produce any symptomatic improvement.

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[6] Mackenzie, C. G., and Mackenzie, J. B.: Effect of Sulfonamides and Thioureas on the Thyroid Gland and Basal Metabolism, Endocrinology **32**: 185-209 (Feb.) 1943. Astwood, E. B.: The Chemical Nature of Compounds Which Inhibit the Function of the Thyroid Gland, J. Pharmacol. & Exper. Therap. **78**: 79-89 (May) 1943. Williams, R. H., and Bissell, G. W.: Thiouracil in the Treatment of Thyrotoxicosis, New England J. Med. **229**: 97-108 (July 15) 1943. Williams, R. H., and Clute, H. M.: Thiouracil in the Treatment of [illegible] 657-667 (June 1) 1944. Rawson, R. W.; Eva [illegible] Peacock, W. C.; Lerman, J., and Cortell, R. R. [illegible] on the Thyroid Glands of Patients with Graves Disease, J. Clin. Endocrinol. **4**: 1-11 (Jan.) 1944. Franklin, A. L.; Chaikoff, I. L., and Lerner, S. R.: The Influence of Goitrogenic Substances on the Conversion in Vitro of Inorganic Iodine to Thyroxine and Diiodotyrosine by Thyroid Tissue with Radioactive Iodine as Indicator, J. Biol. Chem **153**: 151-162 (April) 1944. Rawson, R. W.; Tannheimer, J. F., and Peacock, W. C.: The Uptake of Radioactive Iodine by the Thyroids of Rats Made Goitrous by Potassium Thiocyanate and by Thiouracil, Endocrinology **34**: 245 253 (April) 1944.

[7] Courtesy of Dr. H. L. Jaffe, Hospital for Joint Diseases.

[8] The slide was reviewed by Dr. David Marine.

Radioactive Iodine Therapy.—Observations at Hospitalization: On admission to Montefiore Hospital on April 20, 1942, the patient still had symptoms of pain in the lower part of the spine, in addition to the previously mentioned symptoms of hyperthyroidism.

The physical examination showed a rather small, emaciated, poorly developed man, aged 48, weight 38 Kg. and height 146 cm.; he was hyperkinetic, his blood pressure was 128 mm. of mercury systolic and 50 diastolic; his pulse rate was 100 to 110. There were no eye signs. There was a thyroidectomy scar in the neck, and no thyroid tissue was palpable. The heart was normal except for tachycardia. The lungs were clear. There was a laminectomy scar and tenderness over the dorsolumbar spine. The eye grounds were normal. The skin was warm, and there was a coarse tremor of the hands. The basal metabolic rate on May 7, 1942 was + 36 per cent. The plasma cholesterol about this time was 114 mg. per hundred cubic centimeters and the blood iodine[10] soon thereafter was 11.9 micrograms per hundred cubic centimeters.

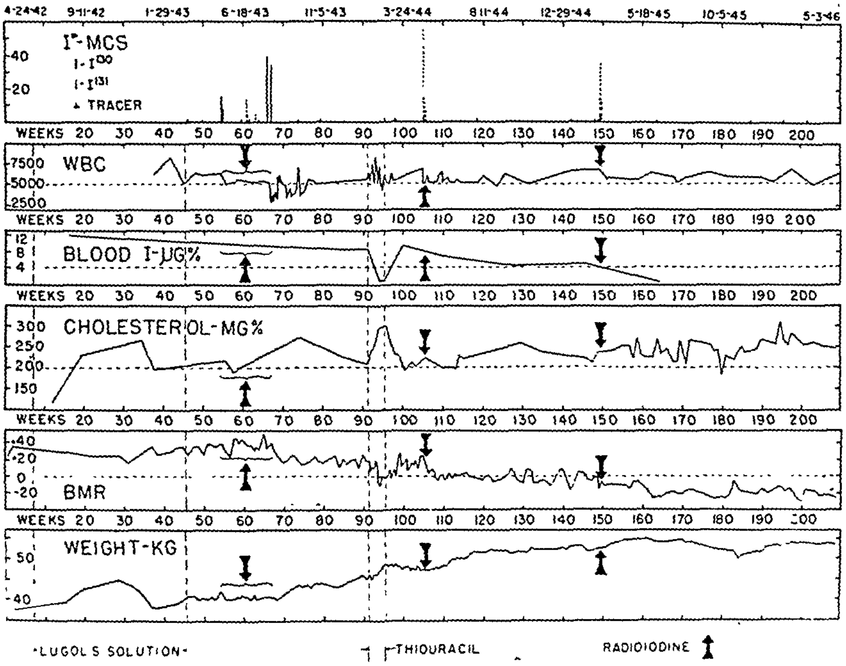

Fig. 2.—Response of clinical criteria to the administration of I^*.

Other laboratory examinations revealed nothing of special significance. The blood chemistry tests showed calcium, 10.3 mg., and phosphorus, 3.9 mg. per hundred cubic centimeters; phosphatase (alkaline) 12.2 Bodansky units; total serum protein, 6.7 Gm.; serum albumin, 3.2 Gm.; serum globulin, 3.5 Gm., and uric acid, 3.9 mg. per hundred cubic centimeters. The Wassermann and Kahn tests were negative; the blood count was within normal limits. Urinalysis was negative. The Ewald test showed free hydrochloric acid, none; combined acid 20 per cent.

A roentgenologic examination of the chest on April 25, 1942 revealed several rounded shadows suggestive of metastases in the lower lobe of the left lung; an extensive destructive lesion (5 cm. long) which involved the lateral and posterior aspect of the second rib on the left side; a circumscribed shadow (3.2 by 1.1 cm.) in the left infraclavicular region, which seemingly arose from the involved rib and represented a soft tissue mass. A picture of the dorsolumbar spine on Nov. 10, 1942 disclosed evidence of laminectomy; the spinous processes of the eleventh and twelfth thoracic vertebrae and the first lumbar vertebra were missing, and osteoporosis involved all the vertebrae. The pelvis on April 25, 1942 showed a small area of bone absorption (0.6 by 2.3 cm.) along the medial aspect of the left ileum above the acetabulum. The femurs on Oct. 29, 1942 presented a small area (larger than in films of December 1941) of bone absorption in the cortex of the right femur just below the lesser trochanter.

In view of the evident hyperthyroidism, iodine as Lugol's solution was administered every day in doses varying from 1 to 6 cc., from June 13, 1942 to March 8, 1943.[5]

As shown in figure 2, a mild remission in the hyperthyroidism occurred in response to the iodine therapy. By January 1943, iodine given as Lugol's solution in doses of 3 to 4 cc. a day lost its effectiveness even in regard to the hyperthyroidism itself, and its continued administration produced little further improvement.

The lesions of the bone continued to grow, and pain persisted. Another course of roentgen therapy was instituted as follows: right upper femur 3,260 r through two fields, and left pelvis 1,985 r through two fields. There was no relief of pain.

Administration of Radioactive Iodine: In March 1943 a tracer dose of radioactive iodine was given orally in the form of sodium iodide in water. This method of administration has been used for all doses. Geiger counter measurements revealed iodine retention by all the known lesions plus two previously unsuspected ones (fig. 3); one in the skull and one, not evident in the roentgenograms, located in the region of the ischium. During the taking of Geiger counter measurements, the patient asked that the counter be placed on the right parietal part of his head, for, he stated, there is a pain there which "is not a headache." Surprisingly, the counter registered the uptake of radioactive iodine. A subsequent roentgenogram (May 18, 1943) of the skull was reported as disclosing a fairly sharply circumscribed area of bone rarefaction (3.7 by 3.5 cm.) in the right posterior parietal region. At this time an exhaustive study of radioactive iodine uptake in the neck was made, and no evidence of residual functioning thyroid tissue could be established (see later comment). Due to technical difficulties, no attempt was made to study the radioactive iodine content of the lung metastases reported by the roentgen ray diagnostic department.

Measurements on urine after several tracer doses revealed that the patient excreted a relatively small amount (30 per cent to 40 per cent) of the tracer dose over a seventy-two to ninety-six hour period. The first course of radioactive iodine therapy, a total of 102 millicuries of the 12.6 hour isotope (I^{130}) and 20.5 millicures of the 8 day isotope (I^{131}), was administered between May and August, 1943 (see the accompanying table). The estimated radiation dose[11] to the tumors was 10,600 equivalent r,[12] whereas that for the blood was 70 equivalent r.

Since this course was administered in fractions of varying potency, it was possible to determine the effect of the different radiation doses on the leukocyte count. The I^{131} had no significant effect while the I^{130} had a considerable, though temporary, depressing influence (fig. 2) The expanded curve, figure 4, shows that after one dose of 40 millicuries of I^{130} the white blood cell count dropped from 5,150 to 2,900 in one week The blood count returned to normal in ten days even though another dose of 35 millicuries of I^{130} was given while the count was low

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[9] Radiation dosages in this paper refer to tumor doses exclusively. Tumor depths were estimated from roentgenograms. Data used here were obtained from Rosh, R., and Raider, L.: Radiation Therapy of Carcinoma of the Thyroid, Radiology **44:** 556-564 (June) 1945 and a personal communication from Dr. Rosh.

[10] Baumann, E. J., and Metzger, N.: On the Amount of Iodine in the Blood, J. Biol. Chem. **121:** 231-234 (Oct.) 1937.

[11] This dose and the following therapeutic doses are calculated on the basis of an effective tumor volume of 312 cc. (vide infra) and on the basis of I^* (I^* refers to radioactive iodine without specifying the isotope) retained; that is, that administered minus that excreted in the urine. The possible change in effective tumor volume with time has been neglected. It would have been preferable, and is planned in the future to estimate tumor dose by actual measurements in vivo.

[12] Equivalent roentgens as used herein are defined and discussed in Marinelli, L. D.: Dosage Determinations with Radioactive Isotopes, Am. J. Roentgenol. **47:** 210-216 (Feb.) 1942.

The resulting improvement in the patient's clinical picture was definite in the course of the next few months By November 1943 the pains diminished, the basal metabolic rate dropped from an average level of above + 35 per cent to about + 20 per cent, the patient gained about 7 Kg in weight and roentgenologically there was no demonstrable growth of the metastases

Biopsy On Nov 6, 1943, a dissection biopsy of the metastasis in the second rib on the left side was performed by Dr. A H Aufses In order to obtain a radioautograph of this lesion and to ascertain the radioactive iodine concentration in the tumor tissue, a large tracer dose of I^{131} (5 millicuries) was administered eight days before the operation To remove the tumor on the second rib on the left side it was necessary to perform a scapula-mobilizing incision, with incision through the muscles of the posterior chest wall The postoperative course was uneventful, and the patient made an excellent recovery

Several radioautographs of the biopsy specimen were obtained by following in general the technic already described by Hamilton[2] Figure 6 shows a representative radioautograph and figure 7 is the eosin and hematoxylin stained section from which it was made A superimposition[13] of these two photographs is shown in figure 8 A detailed comparison between radioautograph and photomicrograph shows specific localization of the radioactive iodine within the regions of viable thyroid tumor cells

The total iodine content per gram of dry tissue of the biopsy specimen was 0.192 mg with a thyroxin fraction of 17.4 per cent The radioactive iodine content of the tumor tissue at the time of the biopsy was determined on four separate fresh specimens, weighing 0.28, 0.17, 1.49 and 2.05 Gm, respectively. The results were 0.18, 0.16, 0.19 and 0.20 per cent of the administered dose per gram of wet tissue[14]

From these figures and from the total urinary excretion up to the time of the biopsy it is possible to calculate the apparent tumor weight in the patient, assuming that the iodine concentration is uniform throughout the metastases and that no appreciable radioactive iodine is present in nontumorous tissues This value is 312 Gm. It is interesting to note at this point that an independent calculation of the tumor volume based on the contour of the metastases in the roentgen ray films agrees with the above value

A comparison of the biopsy tissue (figs. 5 and 9) with a section of the tissue removed on laminectomy in October 1939 (fig. 1) revealed close similarity.

Pathologic Report. The pathologic report was as follows On macroscopic examination the fresh specimen was an oval mass measuring 7.5 by 4.3 by 2.5 cm. and weighing 41.9 Gm. It was enclosed in a grayish white capsule about 0.5 cm thick on the surface of which there were, in places, some fibrofatty tissue and muscle. Attached to the capsule on one surface there was a piece of rib measuring 3.5 cm. in length to which was attached some fragments of muscle and fascia The mass was moderately soft, rather rubbery in consistency. On section, the tissue presented a mottled appearance, predominantly pale brownish with small and larger irregular dark red areas of congestion and hemorrhage, small translucent gray and yellowish foci and a few small, opaque, yellowish areas, probably of necrosis Some thin grayish white strands of fibrous tissue could be seen running through the mass The portion of rib attached to the mass was invaded on its adherent surface by tumor similar to and continuous with that of the mass, and fine bony spicules could be palpated in the latter for a distance of 1 cm or more from the rib

Microscopic examination revealed that the specimen consisted of sections of the tumor fixed in solution of formaldehyde and in Orth's solution and of decalcified portions of the tumor which included invaded rib. The tumor was surrounded by a thick capsule of dense fibrous tissue covered by fibrofatty tissue containing striated muscle fibers as well as some nerves and thickened arteries The muscle fibers showed considerable atrophy and degeneration. Occasional focal infiltrations of small round cells were seen The rather extensive hemorrhage in the capsule and surrounding tissue was probably largely traumatic. There was slight invasion of the capsule by tumor in a few places In all sections the central two thirds or more of the tumor showed

Complete Tabulation of I* Administered

		Iodine			Excretion, per Cent per 24 Hours				
Date	Week	Carrier (Mg)	Radioactive (Mc)	Isotope	1	2	3	4	Remarks
3/11/43	45	0.15	Tr ‡	....	60.0	7.5	1.8	0.5	Iodine as lugol's solution 6/13/42 to 3/8/43
4/ 6/43	49	?	Tr.	...	25.0	15.0	...	...	
5/11/43	54	<0.5	17	I^{130}	11.7	...	...	...	
5/12/43	54	?	7.6	I^{130}	....	...	...	...	
6/15/43	59	0.3	2	I^{130}	14.1	3.0	...	...	
6/23/43	60	Neg.	13.5	I^{131}	26.8	2.6	...	...	
6/26/43	61	?	Tr.	...	..	...	...	...	
7/ 9/43	63	?	7.0	I^{131}	19.5	3.3	2.7	2.5	
7/15/43	63	?	Tr.	..	..	...	..	...	
7/29/43	65	<0.5	40.0 †	I^{130}	20.3	4.1	3.4	3.1	3 day stool, 2.3 per cent
8/ 5/43	66	<0.5	35.0 †	I^{130}	39.3	5.3	4.1	3.7	
9/22/43	73	Tr.	Tr.	...	15.1	1.6	2.3	2.8	
10/ 0/43	79	Tr.	2.0	I^{131}	27.4	4.4	2.9	2.8	
12/19/43	86	0.3	5.0	I^{131}	33.6	3.6	1.2	2.1	Pre biopsy
2/21/44	95	0.03	Tr.	....	79.2	3.7	1.7	1.4	Thiouracil 1/23/44 to 2/21/44
3/10/44	98	0.1	Tr.	...	32.0	2.6	2.2	1.8	
4/28/44	105	2.5	55.4 † 3.2 †	I^{131} I^{130}	45.9	...	..	..	Blood curve taken
4/29/44	105	?	13.8	I^{131}	..	...	...	...	Refeeding
4/30/44	105	?	6.3	I^{131}	..	..	..	...	Refeeding
8/ 2/44	118	0.25	Tr.	....	26.0	2.8	1.3	1.0	
1/13/45	142	<0.2	Tr.	..	45.4	3.5	1.4	1.0	
2/23/45	148	<0.5	Tr	.	?	?	?	?	Thyrotropic hormone 2/8/45 to 2/23/45
3/ 2/45	149	0.01	Tr.	....	34.1	...	...	...	
3/ 3/45	149	1.0	41.6 † 6.0 †	I^{131} I^{130}	54.3	7.7	1.6	...	Blood curve taken
3/ 6/45	149	?	13.4	I^{131}		...	...	...	Refeeding
6/11/45	163	0.3	Tr.	...	59.0	8.2	1.9	1.7	
11/24/45	187	<0.002	Tr	..	59.8	10.6	0.9	...	
1/21/46	195	<0.04	Tr.	..	54.9	8.1	1.3	1.2	
3/ 6/46	201	14.0	Tr.	.	74.7	12.4	1.9	0.4	Large amount of carrier iodine

* I* refers to radioactive iodine without specifying the isotope[11]

‡ Tr indicates a tracer dose

† Measurements of initial activity in millicuries carefully carried out

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[13] This composite photograph was made by John M. Walke of the Physics Department of Memorial Hospital

[14] Dr Albert Keston made an independent determination on two of the specimens

extensive necrosis, hemorrhage and edema. This portion of the tumor consisted largely of fibrinous material which in areas was loose and fibrillar and in other places, dense and hyaline-like. Mixed with this in varying amounts were edema fluid, red blood corpuscles and in a few foci, necrotic and disintegrating polymorphonuclear leukocytes. Small and larger foci of viable tumor, frequently compressed, distorted and degenerating, were also seen in this central area. In places bands of edematous and hyaline-like stroma covered by flattened cells separated islands of fibrinous material, and in other places spindle cells growing in this material suggested organization. The peripheral, viable portion of the tumor disclosed little variation in architecture. It consisted of well differentiated follicles which disclosed considerable variation in size and shape but were predominantly small. The larger ones frequently showed infoldings and occasionally buds of new follicles in the walls. Some were widely dilated and others, compressed and slitlike. The follicles were lined for the most part by fairly uniform large cuboidal cells and in many instances by columnar cells. These cells had abundant acidophilic cytoplasm and fairly large, round, usually central but frequently basal, vesicular and hyperchromatic nuclei with fairly large nucleoli. No mitotic figures were seen. The nuclei on the whole were uniform, but an occasional large hyperchromatic nucleus was seen as well as occasional small pyknotic ones. In large areas the abundant cytoplasm was deeply acidophilic, and the cells resembled the so-called Hürthle cell. In some areas distended follicles were lined by low cuboidal or flattened epithelium. Although most of the follicles were empty or contained some red blood corpuscles and fibrin-like material, a considerable number contained a homogeneous colloid-like material which took a pale pink stain. In some areas the follicles were closely packed and separated only by narrow strands of connective tissue which contained many thin-walled sinusoid-like vascular channels, frequently engorged. In other areas the connective tissue septums were widened by edema and hemorrhage so that the follicles became widely separated. In still other areas there was appreciable fibrosis with atrophy of follicles; the fibrous tissue was cellular in some foci and partly hyalinized in others. Numerous hematoidin crystals were present in areas of recent hemorrhage. A few spicules of bone, some of them necrotic, were seen deep within the tumor.

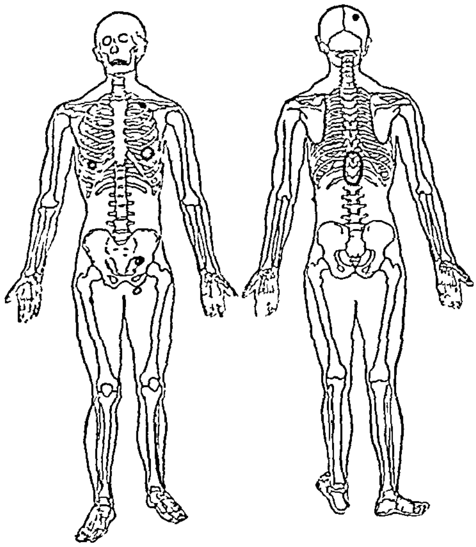

Fig. 3.—Location of metastases; solid black areas indicate osseous lesions, open circles indicate extraosseous lesions.

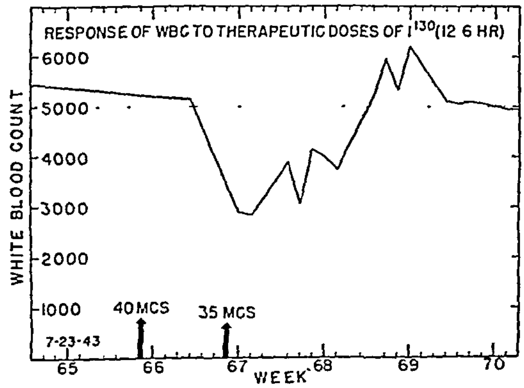

Fig. 4.—Effect of large amounts of I^{130} on the white blood cell count.

Sections taken through rib and adjacent tumor showed invasion of the bone by tumor with replacement of the marrow by a loose connective tissue. There was active formation of new bone, usually by apposition on old trabeculae, together with a lesser degree of osseous destruction. Spicules of bone were seen deep within the tumor itself; some of them were new bone arising from connective tissue septums. Similar new bone formation from connective tissue was seen in one place in the capsule.

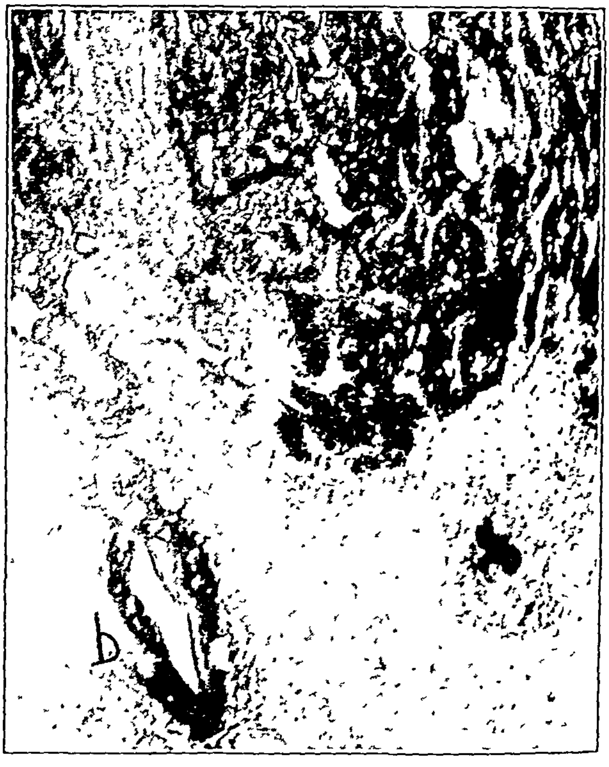

Fig. 5.—Circled area in figure 7 slightly reduced from a low power magnification of 25 times. Note narrow zone of viable tumor around blood vessel (*b*) which showed uptake of radioactive iodine in figure 6.

The diagnosis was metastatic thyroid adenocarcinoma of the differentiated small follicle type.[15]

Subsequent Treatment and Course: From Jan. 23 to Feb. 21, 1944, the patient was submitted to a course of treatment with thiouracil. This was done to check further on the functional nature of the metastases. The thiouracil therapy produced a striking remission of the hyperthyroidism, which, however, promptly recurred after the treatment was discontinued. The effect of thiouracil on the objective criteria of hyperthyroidism is shown in figure 2.

By the end of April 1944 the patient's condition had reached what might be called a state of equilibrium. His weight remained unchanged for two months at the level of 48 Kg, with basal metabolic rate at about + 10 per cent and the plasma cholesterol level between 200 and 214 mg. per hundred cubic centimeters The blood iodine on March 24 was 9 4 micrograms per hundred cubic centimeters Roentgenograms taken on April 21, 1944, showed no detectable changes in the various metastases The second therapeutic dose of radioactive iodine, 55.4 millicuries of the eight day isotope, was administered on April 28, 1944 Twenty-seven per cent of this dose (13.8 millicuries) was extracted from a twenty-one hour urine collection[16] and readministered on April 29. A second fraction from urine was obtained later (6 3 millicuries) and readministered on April 30 Thus a total of 75 5 millicuries was administered within three days, giving a radiation dose of 18,200 equivalent r to the tumor and 64 equivalent r to the blood. The white blood cell count showed only a slight temporary fall from 6,000 to 4,500, which, in our opinion, was not significant The basal metabolic rate dropped to zero in about three weeks and remained at about this level until March 1945. The plasma cholesterol fluctuated from a level of about 200 mg. per hundred cubic centimeters to a somewhat higher level. The blood iodine level dropped to 6 5 micrograms on June 10, 1944, to 4 7 micrograms on Oct 7, 1944 and to 5 1 micrograms per hundred cubic centimeters on Feb 8, 1945 The patient's weight began to rise about three weeks after the administration of the therapeutic dose of radioactive iodine and continued to rise steadily from 48 Kg in April 1944 to 53 Kg in January 1945 Shortly after this second therapeutic dose of radioactive iodine a temporary sharply circumscribed alopecia appeared over the area corresponding to the skull metastasis The patient's general well-being improved, his pains diminished, his locomotion improved, and he complained of getting fat. Roentgenograms on Aug 19, 1944 and Feb. 6, 1945 showed no change

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[15] Dr. S. H. Rosen and Dr. David Marine.

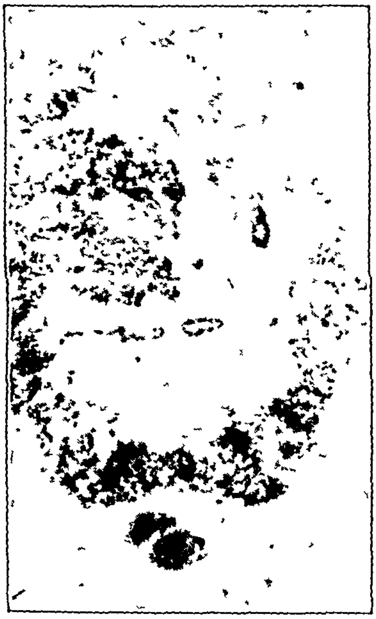

Fig 6—Radioautograph of an entire unstained section of metastatic tumor in second rib on the left side with magnification slightly reduced from 8 times, showing distribution of radioactive iodine in the viable tissue

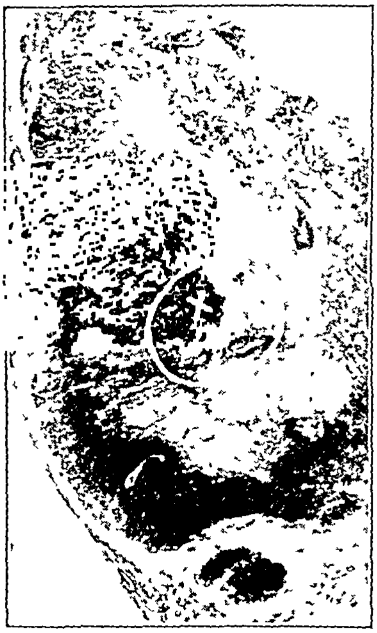

Fig 7—Photomicrograph of section used for figure 6 stained with eosin and hematoxylin, same magnification Note viable (dark) and necrotic (light) areas.

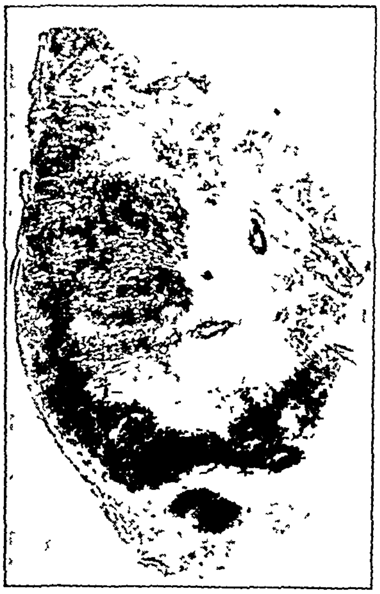

Fig 8—photograph of figures 6 and 7 superimposed, showing coincidence of radioactive iodine distribution with the viable tumor

From Feb 8 to 25, 1945, the patient was given intramuscular injections of thyrotropic factor (Armour's; Rowlands-Parkes' units per cubic centimeter) The injections were given in divided doses every one or two days for a total of 33 cc in eighteen days During this interval of treatment there was no rise in the basal metabolic rate, no significant change in plasma cholesterol and a slight fall in blood iodine (from 5.1 to 4 1 micrograms per hundred cubic centimeters). Bioassays of the urine for thyrotropic hormone[17] both before and during the interval of this treatment were negative, indicating that the patient's own thyrotropic hormone was inactivated by the tumor tissue.[18]

On March 3, 1945, the third therapeutic dose of radioactive iodine was given It consisted of 41 6 millicures of I^{131} plus 16 0 millicuries recovered from the urine and fed three days later. The total of 57 6 millicuries gave a tumor dose of 11,600 equivalent r, a blood dose of 41 equivalent r. The patient's weight increased and the basal metabolic rate, which was in the normal range immediately before the treatment, dropped to —27 per cent in about three months and has remained consistently low The plasma cholesterol increased slightly and has remained above the pretreatment level. The blood iodine dropped from 4.1 micrograms per hundred cubic centimeters immediately before this third therapeutic dose to 0 8 microgram per hundred cubic centimeters three months later.

The patient's general condition is good. He moves freely about the hospital and is engaged in occupational therapy.

COMMENT

Adenocarcinoma of the thyroid is generally considered highly radioresistant. H. F. Hare[19] specifically stated that alveolar carcinoma of the thyroid is not changed histologically by 6,000 r (x-ray). For a successfully treated patient (his case 2) Hare gives the dimensions of the tumor and the interstitial radon dose employed. Calculations show the gamma ray dose to be close to 20,000 r, a value well beyond the reach of external radiation.

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[16] Dr. E J Baumann, Chemistry Department, Montefiore Hospital, developed a procedure for extracting iodine from urine so that it could be refed to the patient in the form of sodium iodide This technic was utilized whenever the amount of I* involved warranted it The efficiency of recovery was consistently high, 80 to 95 per cent

[17] Determinations were made on young guinea pigs weighing 200 Gm, using total weight of thyroid gland and degree of hyperplasia as criteria Extraction of thyrotropic hormone from the urine followed the method described by Jones, M. S · Study of Thyrotropic Hormone in Clinical States, Endocrinology **24**: 665 671 (May) 1939

[18] Seidlin, S M · The Metabolism of the Thyrotrophic and Gonadotrophic Hormones, Endocrinology **26**: 696 702 (April) 1940 Rawson, R W.; Sterne, G D, and Aub, J. C · Physiological Reactions of the Thyroid Stimulating Hormone of the Pituitary: I Its Inactivation by Exposure to Thyroid Tissue in Vitro, ibid **30**: 240 245 (Feb) 1942.

[19] Hare, H F: Radiation Treatment of Carcinoma of the Thyroid, Am J. Roentgenol **46**: 451-453 (Oct) 1941.

Since 1 microcurie of 8 day iodine destroyed per gram of tissue gives approximately 150 equivalent r,[20] to achieve comparable dosage we must concentrate at least 133 microcuries in each cubic centimeter of tumor, if turnover is assumed to be zero. For our patient, with approximately 300 cc. of tumor tissue, such a dose would require that 40 millicures of I^{131} be fixed in the tumors. The actual amount to be fed, however, may be several times this amount, because of the loss of iodine by excretion and by deposition in other tissues, especially if normal thyroid tissue is present.

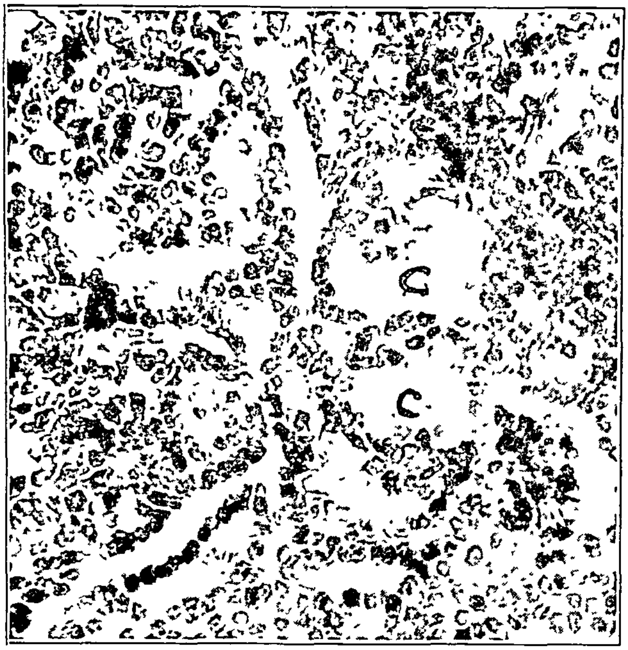

Fig. 9.—Higher magnification (400 times) of section taken at X in figure 7. Note follicular structure and colloid like material (*c*) in a few follicles.

In addition to these rough quantitative considerations, criteria of a biologic nature, such as the time factor and lack of irradiation of the tumor bed beyond a few millimeters, must be considered in comparing the results of 8 day iodine beta ray therapy with those of 3.82 day radon gamma ray therapy. These remain to be assessed on the basis of additional experience.

Over a period of three years, our patient has received nearly 40,000 equivalent r to each of his tumors. In spite of the remarkable clinical improvement, it cannot be concluded that the functioning tumors have been completely destroyed because recent tracer studies, although showing a marked increase in excretion, still show localization of radioactive iodine in the lesions. Further therapy is indicated and is being planned, the limiting factor being the availability of the isotope in sufficient quantity. The criterion for completion of I* therapy will be the lack of radioactive iodine pickup by any of the known metastases, although the possibility remains that the tumors, even in the absence of any uptake, will not be completely destroyed.

All available roentgenograms taken of this patient since July 1939 were reviewed recently in order to evaluate as precisely as possible the progress of the various skeletal lesions. Between July and October of 1939, films were made of the spine, pelvis, skull, arms, legs and left femur. At this time all the regions were negative for metastases. In November 1939, the extraosseous metastatic tumor in the back was removed. By 1941 there were early lesions in the right femur, right ileum and chest as described in the case history. These lesions increased in size, and the one in the skull was discovered in 1943. Frequent plates were taken of all these regions from 1942 until the present, and they show that there was no increase in the area of bone destruction in any region after the first therapeutic dose of I^{131} was administered in 1943. Representative films showing the progress of three of the lesions are shown in figures 10, 11 and 12.

The urinary excretion of radioactive iodine was followed after almost every dose, tracer or therapeutic; on several occasions the collection period was longer than a month. As an illustration, the data obtained after the dose of Aug. 5, 1943, is shown in figure 13. Plotted on semilogarithmic paper, the curve shows two distinct, consecutive rates of change in daily excretion, the break occurring three days after administration. In the same figure a second curve is shown which represents the daily excretion of radioactive iodine by this patient soon after the cessation of thiouracil therapy. The data as a whole seem consistent with the hypothesis that in both instances the excretion of radioactive iodine within three days of administration is governed by a mechanism different from the one which governs its excretion thereafter.

The concentration of radioactive iodine in the blood as a function of time was studied in order to gain information of physiologic and radiologic significance. Shown in figure 14 is a composite curve obtained after the administration of the last two therapeutic doses of radioactive iodine (April 28, 1944; March 3, 1945). The individual determinations pertaining to each study are shown in detail. The data of Frantz and her associates[1] are also shown for comparison. From the curve it is seen that the level of I* in the blood

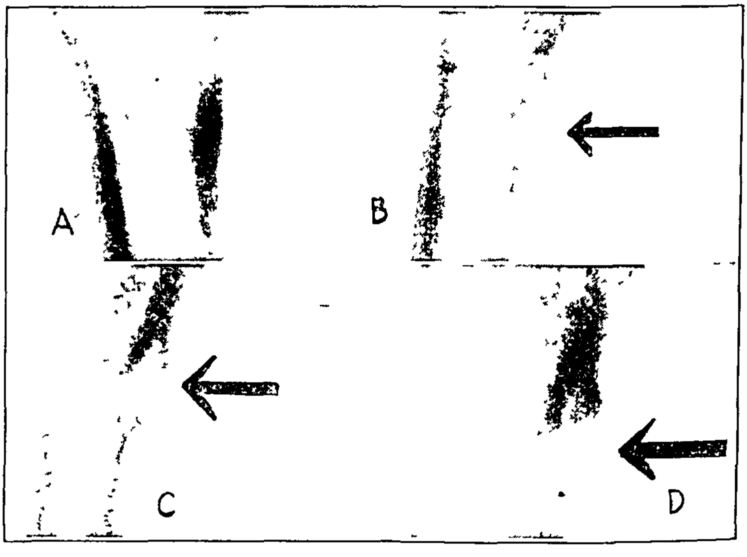

Fig. 10.—Roentgenologic appearance of lesion of the femur on *A*, Oct. 30, 1939, *B*, Oct. 29, 1942, *C*, June 22, 1944, and *D* (a higher magnification), May 22, 1946.

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[20] A complete description of experimental methods and calculations will be given in a companion paper now in preparation.

remains essentially constant for a considerable period after the first day. An analysis of the detailed data obtained on this particular patient indicates that the curve represents three different phases; a rapid initial turnover (about twenty-four hours) which is succeeded by a stabilized level of one week's duration, and finally, a slow but steady decline.

Many authors have reported significant drops in the white blood count after the administration of radioactive isotopes other than iodine. Our experience with large doses of radioactive iodine shows that with this element the effects on the white blood cells are not pronounced and are short-lived. A drop in total leukocytes with no significant variation in the differential was observed after the administration of large amounts of I^{130} but not after the use of I^{131}, although the total blood dosages were comparable in magnitude. However, since radiation from the 12.6 hour isotope is delivered almost entirely within two days, whereas from the 8 day isotope nearly the same proportion is delivered within thirty-two days, we must infer that the time factor is mainly responsible for the previously stated results. This is analogous to many other radiobiologic phenomena such as erythema production with single and fractional roentgen therapy, in which time is an important factor.

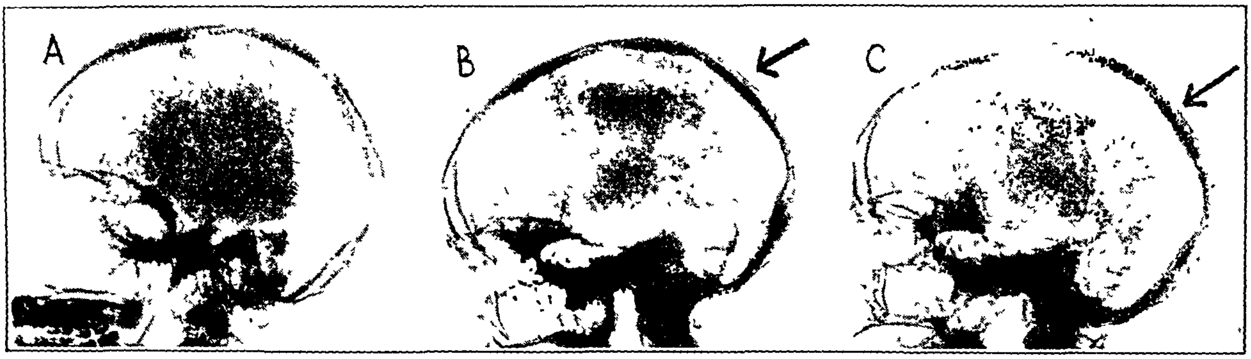

Fig 11.—Roentgenologic appearance of lesion of the skull on *A*, Oct. 30, 1939, *B*, May 18, 1943, and *C*, Feb 4, 1946

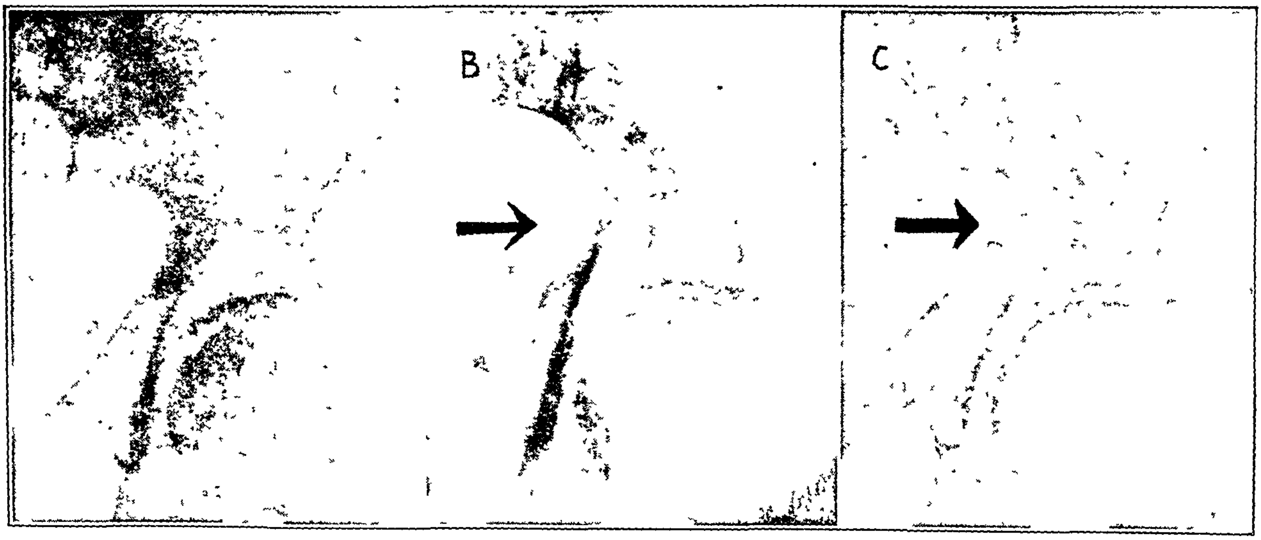

Fig 12.—Roentgenologic appearance of lesion of ilium on *A*, July 17, 1939, *B*, Nov 10, 1942, and *C*, May 22, 1946

It is logical to assume that the effect of this factor on tumor tissue will be in the same direction as it is on the blood. Therefore, consideration of the time factor alone might seem to contraindicate the use of I^{131} in the treatment of tumors because higher doses would be required to obtain a given effect. The value of radiation treatment, however, must be based on the differential effect on both tumor and normal tissue. It can be shown for oral administration of the isotope that the ratio of the tumor dose[21] to the blood dose is about 80 when I^{130} is used and about 300 when I^{131} is used. Thus, the use of I^{131} would be approximately four times as effective as the use of I^{130} if there were no time factor involved. To offset this advantage the differential time factor would have to render the 12.6 hour isotope more than four times as effective for a given blood dose as the 8 day isotope before there could be a question about the advisability of the use of I^{131} in preference to I^{130}. This remains to be determined.

In earlier studies[22] of thyroid-iodine metabolism by the use of I^* it was shown that irrespective of the total amount of iodine administered, the hyperactive gland initially retains more I^* than the normal gland but loses it faster. The rate of loss seems to increase with larger amounts of carrier iodine.

With this in mind as well as with the purpose of determining ultimately the actual radiation dose delivered to the tumors, the I * turnover in the lesions was studied by means of suitable Geiger-Mueller counters under reproducible geometric conditions. This was done several times between May and August 1943, as well as ten months and one year after the third therapeutic dose. Unfortunately, the 1943 measurements—due to circumstances partially beyond our control—cannot be interpreted without making some assumptions. The only thing that can be said is that several days after the administration of a tracer dose of I ^{131} the activity of all the lesions, when corrected for decay of 8 day iodine, disclosed the elimination of about 0.5 per cent of the dose per day. This observation per se cannot be interpreted as a demonstration that the tumor tissue metabolized I * at the rate of normal thyroid tissue, although this was our impression. The latest data (1946), figures 15 and 16, taken much more accurately, show a rapid loss of I * in the two lesions studied when 40 micrograms of carrier iodine was administered. With the larger amount of carrier iodine, the rate of loss was not as great, in proportion. We are unable to interpret these data in the light of published works on the turnover of I * in the thyroid itself.

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[21] Calculated on the basis of the experimental curve of concentration of the I^* in the blood and a net tumor elimination rate of 0 5 per cent per day.

[22] Hertz, S., Roberts, A, and Salter, W. T.: Radioactive Iodine as an Indicator in Thyroid Physiology: IV The Metabolism of Iodine in Graves' Disease, J. Clin Investigation **21**: 25 32 (Jan) 1942. Hamilton.[2]

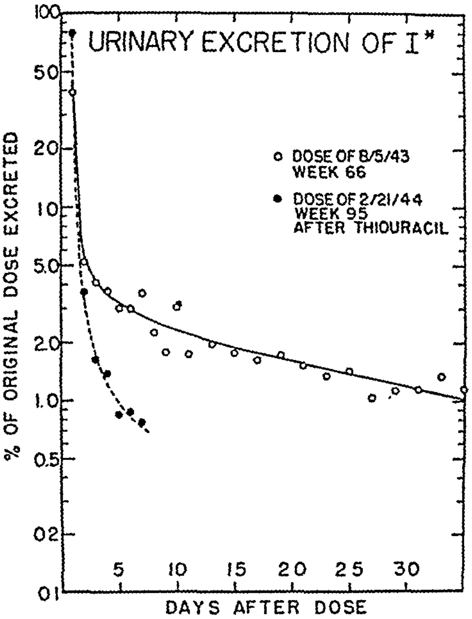

Fig. 13.—Typical trend of urinary excretion of I *.

Owing to the unusual nature of this case, that is, hyperthyroidism despite total thyroidectomy, the procedure and results of our studies of radioactivity over the region of the original thyroid as well as over the metastases may be of interest.

The experimental setup and the theoretic considerations will be described in detail in another paper. It suffices to state here that the Geiger counter is shielded with a ¾ inch (1.91 cm.) thickness of lead and provided with a suitable window. The activity of any lesion or region is obtained by taking the difference between readings with the window open and those with the window plugged with a ¾ inch (1.91 cm.) thickness of lead. This method greatly facilitates the localization of radioactive iodine in contiguous lesions.

The counter readings over the thyroid area were on the average only 5 per cent of the readings obtained over the metastasis of the skull. This percentage did not change materially throughout the course of the study. The readings over the thyroid region were two to three times the readings taken over the lateral surface of the right calf but consistently less than readings obtained over the apex of the right lung, although both regions were free from metastases. A comparison with 2 nonthyroidectomized patients under similar conditions of dosage and excretion showed that iodine pickup in this patient's thyroid region was only 4 per cent and 6 per cent, respectively, of the iodine pickup in the thyroid regions of the other 2 patients.

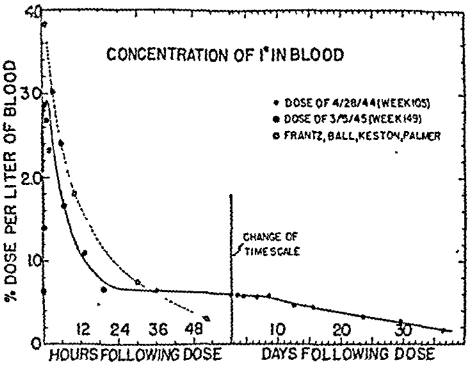

Fig. 14.—Concentration of I * in the blood (corrected for decay) after oral administration of the radioactive element.

While the evidence presented herein shows clearly that there was little activity over the thyroid region, it might be argued that since this activity was greater than that obtained over the calf, the existence of some residual thyroid tissue cannot be ruled out. However, the presence of functioning metastases in the neighborhood of the thyroid region will cause some scattered gamma radiation to enter the instrument. No similar condition exists in the region of the calf, which was first used as a control. But when, with this in mind, we chose as a control region the apex of the right lung—analogously situated with respect to the neighboring functioning metastases, but containing none—we obtained readings even greater than those in the thyroid region by 15 to 30 per cent.

The foregoing, in our opinion, is presumptive evidence that there is no functioning thyroid tissue in the neck and confirms the previous surgical observations.

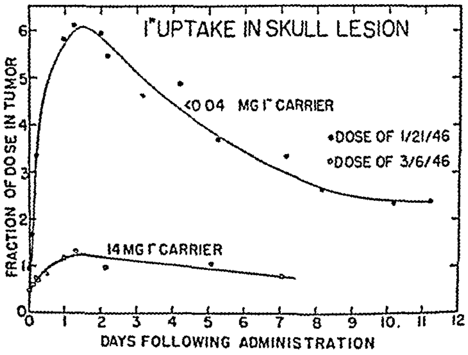

Fig. 15.—I * uptake in a representative lesion of the skull subsequent to the administration of doses containing different amounts of carrier iodine.

It is pertinent to mention that 4 cases of metastatic carcinoma of the thyroid without clinical hyperthyroidism have been studied with radioactive iodine and have shown selective localization in the lesions. Two of these are now under treatment with I.*

SUMMARY

A case of metastatic adenocarcinoma of the thyroid is reported in which treatment by means of radioactive iodine has been successful. The patient was completely thyroidectomized for "malignant adenoma" in 1923, with neither thyrotoxicosis then nor hypothyroidism postoperatively; fifteen years later there developed classic symptoms of hyperthyroidism and severe pain in the lower back. In October 1939 a pulsating tumor removed from the level of the twelfth thoracic vertebra proved to be metastatic thyroid adenocarcinoma (histologically well differentiated, with small follicles and colloid). In the next two years hyperthyroidism increased and roentgenograms revealed new metastases in the lungs, upper part of the right femur, second rib on the left side, left ileum and skull. Roentgenologic irradiation of the metastases proved ineffectual.

In March 1943 a tracer dose of radioactive iodine revealed iodine retention by all the known lesions and no evidence of residual thyroid tissue in the neck. Therapeutic amounts of radioactive iodine were administered orally between May and October 1943. Definite and lasting clinical improvement followed. In April 1944 and March 1945 additional I* was administered with a resultant disappearance of pain, increase in weight and progressive change in all clinical criteria in the direction of hypothyroidism. Roentgenographic evidence pointed to an arrest if not a regression of the disease. No untoward effects followed this therapy.

Radioactive iodine seems to be an effective therapeutic agent in the control of this type of tumor.

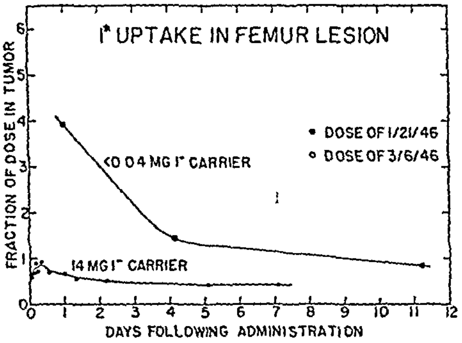

Fig. 16.—I* uptake in a representative lesion of the femur subsequent to the administration of doses containing different amounts of carrier iodine. The fraction of dose in the tumor is proportional to the ratio of counts obtained over the given lesion under fixed geometric conditions to counts obtained at the same time on an aliquot part of the administered I*. Thus, figures 15 and 16 represent correctly the time change in concentration in any one lesion, but because of the geometric differences involved in the measurements they do not permit direct comparison of the I* concentration in the two lesions.

Fundamental Research and the Rh Factor.—The fundamental basis for the recognition of the Rh factor was laid in 1900 when three important discoveries were made. First, the mendelian laws of heredity, published thirty-five years previously, were independently rediscovered by Correns, Tchermak and de Vries. Second, in the same year Landsteiner discovered the phenomenon of normal isoagglutination as the basis of the four blood groups, and in the next year he mentioned their significance in the selection of donors for transfusion. Third, and of more immediate importance, Ehrlich and Morgenroth discovered the phenomenon of isoimmunization, which they demonstrated in goat blood and which other workers later demonstrated in many species.—Levine, Philip, M.D.: The Present Status of the Rh Factor, *Am. J. Clin. Path.* October 1946.

TREATMENT OF EARLY SYPHILIS WITH CALCIUM PENICILLIN-OIL-BEESWAX

MAJOR MONROE J. ROMANSKY
Medical Corps, Army of the United States
and
CHARLES R. REIN, M.D.
with the Technical Assistance of Mr. George E. Rittman
Washington, D. C.

The early development and progress in the production of a suspension of calcium penicillin in beeswax and peanut oil has already been reported.[1] The initial successful clinical results in the treatment of gonorrhea [1c] by a single injection of this mixture suggested its use for the treatment of syphilis. It should be emphasized that the primary purpose of this paper is to illustrate an ambulatory method of therapy whereby the patient receives one injection of penicillin instead of the usual eight injections a day.

This study was initiated in August 1944. Since then 75 patients with early syphilis have been treated, of whom 72 were men and 3 women. The ages varied from 18 to 44. There were 37 white and 38 Negro patients. Fifty-six had primary syphilis, of whom only 6 were seronegative, while the remaining 19 had secondary syphilis. All patients were subjected to serologic examination prior to institution of treatment. Dark field examinations gave positive results in 73 patients. The remaining 2 gave a history of having had a penile lesion followed by the development of a generalized eruption and had persistent strongly positive serologic reactions for syphilis, but dark field examinations were not made. Before treatment 31 patients with primary syphilis and 16 with secondary syphilis had an examination of the spinal fluid, which included cell count, Kolmer complement fixation, total protein, globulin and colloidal gold tests. The 31 patients with primary syphilis had normal spinal fluids, while 4 of the 16 with secondary syphilis had abnormal spinal fluids.

The treatment consisted of the daily intramuscular (buttock, deltoid or triceps) administration of 300,000 units of calcium penicillin in beeswax and peanut oil for eight days.

Of the first 14 patients treated, 2 received 100,000 units three times a day, 2 received 150,000 units twice a day and 10 received 300,000 units in 2 or 3 cc. once a day. The remaining 61 patients received 300,000 units in 1 cc. The total number of Oxford units for all patients was 2,400,000 which is comparable to the

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From the Penicillin Section and Medical Service, Walter Reed General Hospital, and the Department of Serology, Army Medical School, Army Medical Center (Mr. Rittman).

Major Romansky is now civilian consultant in antibiotics to the office of the Surgeon General, U. S. Army, and associate clinical professor of medicine, George Washington University School of Medicine, Washington, D. C.

Assistance was rendered by the following medical officers: Captain Robert J. Murphy, Captain Aubrey Harwell, Captain Samuel Katz, Captain Francis W. Epstein and Captain Merritt E. Roberts. Miss Mina Levy, Miss Dorothy Talbott, Miss Jewel Patton, Miss Lillian Axelrod, Miss Sarah McDearman and Sergeant Leslie H. Wood gave technical assistance.

[1] (a) Romansky, M. J., and Rittman, G. E.: Method of Prolonging Action of Penicillin, Science **100:** 196, 1944; (b) *Penicillin: Prolonged Action in Beeswax Peanut Oil Mixture; Single Injection Treatment of Gonorrhea*, Bull. U. S. Army M. Dept., no. 81, p. 43, 1944. (c) Romansky, M. J.; Murphy, R. J., and Rittman, G. E.: *Single Injection Treatment of Gonorrhea with Penicillin in Beeswax Peanut Oil: Results in One Hundred and Seventy-Five Cases*, J. A. M. A. **128:** 404 (June 9) 1945.

practice of giving sixty injections in seven and one-half days for the same total.

The schedules of therapy for the first 14 patients were necessary since the potency of the then available calcium penicillin was inadequate to produce a mixture which would maintain satisfactory levels in the blood for approximately twenty-four hours after a single intramuscular injection. As soon as calcium penicillin with a potency of approximately 1,000 units per milligram was available, it was possible to suspend 300,000 units in 4.8 per cent beeswax (by weight) in peanut oil contained in 1 cc. As shown in a previous report,[2] this mixture will maintain satisfactory assayable levels in the blood for about twenty to twenty-four hours after a single injection and continue to be excreted in the urine for about three days. Patients 15 to 75, therefore, received the preparation consisting of 300,000 units of calcium penicillin in 4.8 per cent beeswax in peanut oil contained in 1 cc.

Blood was obtained at thirty minutes and at four hour intervals for twenty-four hours in order to determine the penicillin levels. During the subsequent seven days of therapy, blood was withdrawn at the twenty-fourth hour after injection for the same purpose. Specimens of urine were obtained for six days following the last injection in order, to determine for how long a period penicillin continued to be excreted. Dark field examinations were repeated at frequent intervals in order to determine the disappearance time of the spirochetes. Patients were also observed for the appearance of Herxheimer reactions. Daily inspections were made to determine the time of healing of syphilitic lesions. The patients were observed for a minimum of fifteen days, during which time additional specimens of blood were withdrawn for serologic examination. Blood was also withdrawn monthly for as long as possible. Each serum was subjected to a battery of six qualitative serodiagnostic procedures, including Kline diagnostic, Kline exclusion, Mazzini, Kahn and Kolmer tests as well as a new microflocculation test employing a cardiolipin antigen.[3] All serums which gave a four plus reaction with any of the foregoing procedures were also tested quantitatively by the same procedures.

Results of 75 Cases of Early Syphilis Treated by a Single Daily Intramuscular Injection of 300,000 Units of Calcium Penicillin in 4.8 Per Cent Beeswax in Peanut Oil Contained in 1 Cc. for Eight Days

Length of Time Followed, Mo.	Attained Seronegativity		Satisfactory Clinical and Serologic Follow-Up		Relapse, Secondary Syphilis	Not Followed
	Primary Syphilis	Secondary Syphilis	Primary Syphilis	Secondary Syphilis		
Less than 3..	6	..	2	3	..	15
3............	5	..	4	1	1	..
6........	7	..	3	1	1	..
9........	7	2	..	2	..	..
12 or more...	12	1	..	2	..	..
Total cases	37	3	9	9	2	15

Penicillin was continuously present in the blood during the eight days of therapy. Its presence in the urine for six days following the last injection indicated that penicillin was present in the blood for a total of fourteen days. When penicillin in aqueous solution is administered in sixty intramuscular injections of 40,000 units every three hours for seven and one-half days, penicillin will not be present in the blood at the end of the eighth day. This indicates that with the same total dosage (2,400,000 units) patients receiving the beeswax and peanut oil mixture may have the benefit of penicillin for an average of five to six days more than those who receive sixty injections of the aqueous solution.

The lesions were rendered dark field negative in ten to thirty-six hours after the initial injections of penicillin in beeswax and peanut oil. Fifty-two per cent were negative by the twelfth hour, 97 per cent by the twenty-fourth hour and the rest by the thirty-sixth hour.

In 39 per cent of the patients some degree of Herxheimer reaction developed, as evidenced by a slight to moderate rise in temperature. Ten per cent of these also had a concomitant cutaneous reaction, as manifested by exacerbation of an existing secondary eruption or the development of a rash.

Both primary and secondary lesions were healed in three to twelve days, with an average healing time of seven days.

Of the 75 patients treated, results for 60 are shown in the table. The remaining 15 patients could not be followed clinically or serologically for a sufficient length of time to be evaluated. These patients, however, are included, since they showed a satisfactory time for disappearance of the spirochetes and a rapid healing of primary and secondary syphilitic lesions. Forty (66.6 per cent) of the 60 patients attained and maintained seronegativity with all tests in the serologic battery for the period of follow-up. An additional 18 patients (30.0 per cent) showed satisfactory progress at the time of the last serologic examination. There was, therefore, a satisfactory response in 58 of the 60 patients followed. The results in 2 patients (3.3 per cent) with secondary syphilis are classified as failures. There were two reinfections. Both of the patients with reinfection had attained and maintained seronegativity following treatment. Thereafter, a new seronegative dark field–positive primary lesion developed. Serologic reactions subsequently became positive. Contacts with infectious syphilis were established in both instances.

Of the 40 patients who attained seronegativity, 37 had primary and 3 had secondary syphilis. It is interesting to note that all patients who became seronegative *within six months* had *primary syphilis*, whereas the 4 patients who were still seropositive (but had shown a satisfactory response) at nine or more months following therapy had secondary syphilis.

Some of the factors which determined the length of time required to attain seronegativity are as follows: (1) the stage of the disease at the time treatment was instituted (examinations of patients with primary syphilis gave negative results earlier than those of patients with secondary syphilis); (2) the serologic titer at the onset of treatment (examinations of patients with low-titered serologic reactions gave negative results earlier than those of patients with high-titered serologic reactions), and (3) sensitivity of the tests employed (tests with greater sensitivity maintained seropositivity for longer periods than did the less sensitive tests).

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[2] Romansky, M. J., and Rittman, G. E.: Penicillin Blood Levels for Twenty-Four Hours Following a Single Intramuscular Injection of Calcium Penicillin in Beeswax and Peanut Oil, New England J. Med. **233:** 577, 1945.

[3] Rein, C. R., and Bossack, H. N.: Cardiolipin Antigens in the Serodiagnosis of Syphilis: A Microflocculation Slide Test, Am. J. Syph., Gonor. & Ven. Dis. **30:** 40, 1946.

It is important that all patients receiving penicillin therapy be subjected to serologic examinations at frequent intervals (at least once a month) in order to detect serologic relapse and impending clinical relapse as early as possible. A serologic relapse usually precedes a clinical relapse by about one month.

Twenty-four hours after the intramuscular injection of penicillin in beeswax and peanut oil there was some soreness to pressure at the site. This was usually gone by the forty-eighth to seventy-second hour. This sequence of events occurred after each injection, although the injection was administered at a different site. The soreness was no severer than that following the multiple injections of an aqueous solution of penicillin, and the patient had the added advantages of being on an ambulatory basis and of receiving only one injection a day. It is not desirable to massage the site of injection, since diffusion of the material will accelerate absorption and increase local soreness.

Studies of tissue in animals and in human beings [4] from the sites of injection of calcium penicillin in beeswax and peanut oil show that, although the material may be injected subcutaneously, considerably less reaction occurs when it is given intramuscularly. Clinically, this is also true, as indicated by subjective and objective findings.[4a] This has also been corroborated by Nichols and Hauntz [5] but it is contrary to the report of Kirby and associates,[6] who stated that less discomfort occurs following the subcutaneous administration of penicillin in beeswax and peanut oil.

Two patients in this group had allergic reactions manifested by the development of urticaria five to six days following the eighth injection. The urticaria was similar to that seen after the use of an aqueous solution of penicillin and lasted for six to seven days, reaching its peak on the fourth day. The incidence of allergic reactions after the intramuscular use of calcium penicillin in beeswax and peanut oil is about the same as that following the use of an aqueous solution of penicillin by multiple injections or by other routes. Reactions at the site of injection are more frequent when penicillin in beeswax and peanut oil is given subcutaneously. The preceding conclusion is based on the treatment and study of approximately 500 patients given a single daily injection of calcium penicillin in beeswax and peanut oil for a variety of diseases.[4] No other untoward reactions were noted as a result of the administration of this mixture. Beta-dimethylaminoethyl benzhydryl ether hydrochloride (Benadryl), a new drug, is effective in most instances in alleviating the allergic manifestations produced by penicillin. We have also used it simultaneously with penicillin to prevent the allergic complications in patients who have previously been sensitive to penicillin.

The present preparations of calcium penicillin in beeswax and peanut oil present no difficulty in administration, since they can be administered with a 22 gage needle at room temperature (25 C.) if necessary. However, the practical needle for routine use is the 20 gage. This is best illustrated by the fact that over fifty thousand injections of this preparation have been given by the nursing staff at the Walter Reed General Hospital in the treatment of all conditions necessitating the use of penicillin. In the early preparations some trouble in withdrawal and administration was experienced. As a rule this was due to the occasional difficulty in properly blending the penicillin powder, with the result that the mixture was viscous and occasionally large particles obstructed the passage of the mixture through the needle. The method of administration has been reported previously.[2] However, one point should be emphasized. Once the material is drawn into the Luer-Locke syringe it should be allowed to cool to room temperature prior to injection. It is unnecessary to rewarm the syringe. In view of its stability, the calcium penicillin in beeswax and peanut oil can be kept at room temperature for at least a year.[7]

It has been stated previously [8] that because of the hygroscopic factor in the noncrystalline sodium salt the calcium salt must be used in the preparation of penicillin in beeswax and peanut oil mixtures. This is contrary to a recent report of Leifer and Kirby [9] who stated that the sodium salt may be used as well as the calcium. It has been observed that not only does the noncrystalline sodium salt produce erratic and less prolonged levels than the calcium but, more important, it does not maintain its stability.[10] Furthermore, there is a tendency for the particles of sodium salt to congeal into clumps in the beeswax and peanut oil mixture, preventing passage of the material through the needle. These difficulties may be obviated when crystalline sodium salt is available for the preparation of the penicillin-beeswax-peanut oil mixture.

The data presented indicate that early syphilis may be treated by the described ambulatory method, only one daily injection of penicillin being employed for eight days. We, as well as others, have encountered failures regardless of the penicillin schedule used. With the hope of reducing the number of such failures, we have initiated a study in which the same single dose of 300,000 units of penicillin is administered daily over a period of sixteen days for a total of 4,800,000 units. An additional group of patients with early syphilis is being treated on the same schedule with crystalline penicillin G in beeswax and peanut oil.

SUMMARY

1. An ambulatory method for the treatment of early syphilis is described. A single daily intramuscular injection of 300,000 units of calcium penicillin in 4.8 per cent beeswax in peanut oil contained in 1 cc. is administered for eight days.

2. Fifty-eight of the 60 patients thus treated and followed gave satisfactory results. Although the number of patients in this study is too small to be statistically significant, the results obtained with this method of therapy suggest a favorable trend.

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[4] (a) Romansky, M. J.: The Current Status of Calcium Penicillin in Beeswax and Peanut Oil. Data from a Study of 600 Cases and Clinical Observations of 4,000 Patients Given 60,000 Injections, Am. J. Med. **1**: 395, 1946 (b) Romansky.[1a, b]

[5] Nichols, D. R., and Hauntz, C. A.: Prolonged Action of Penicillin in Mixtures of Beeswax and Peanut Oil, Proc. Staff Meet., Mayo Clin. **20**: 403, 1945.

[6] Kirby, W. M. M.; Martin, S. P.; Leifer, W., and Kinsman, J. M.: Maintenance of Therapeutic Blood Concentrations of Penicillin for Twenty-Four Hours Following Single Injections of Penicillin Beeswax Peanut Oil Mixtures, J. Lab. & Clin. Med. **31**: 313, 1946

[7] Romansky, M. J.: The Stability of Non Crystalline Calcium Penicillin in Beeswax and Peanut Oil at 10°, 25°, 37°, 56° and 100° C., to be published. Romansky.[4]

[8] Footnotes 1 and 2.

[9] Leifer, W., and Kirby, W. M. M.: The Treatment of Gonococcal Urethritis with Single Injections of Penicillin-Beeswax-Peanut Oil Mixtures, New England J. Med. **233**: 583, 1945.

[10] Footnotes 1, 4 and 7.

ABSTRACT OF DISCUSSION

Dr. Donald R. Nichols, Rochester, Minn.: Mixtures of beeswax and peanut oil have been used successfully to prolong the action of several drugs. Romansky and his colleagues have reported in detail their method of prolonging the action of calcium penicillin by suspending it in a mixture of beeswax and peanut oil. At the request of the Office of the Surgeon General of the United States Army, Herrell and I undertook to evaluate this method of administration. We previously had studied the calcium salt of penicillin and had found it generally satisfactory for intravenous and intramuscular treatment of bacterial infections and no more irritating to tissues than the sodium salt. The suspension of calcium penicillin in beeswax-peanut oil mixtures was found to be a practical and effective method of delaying the absorption of penicillin after intramuscular and subcutaneous administration. A concentration of at least 0.03 of an Oxford unit of penicillin was maintained in the blood for twenty-four hours following a single intramuscular injection of 300,000 units of calcium penicillin in a 4.8 per cent mixture of beeswax and peanut oil. Previously the viscosity of the mixture made the administration of this preparation difficult. However, suitable amounts are now dispensed in individual syringes so that a single dose can be injected directly into the tissues. This greatly lessens the difficulty of administration. The incidence of troublesome local reactions and generalized allergic reactions from penicillin in beeswax-peanut oil mixtures has been higher in our experience than that reported by Romansky. However, these reactions have been transient. There has been no evidence of any permanent foreign body reaction. The absence of any serious irritating effects and the convenience of huge concentrated doses which need be given only at relatively long intervals are factors which emphasize the practicability of this method of administration. It seems highly probable that penicillin administered in beeswax-peanut oil mixtures will be of value in the treatment of syphilis.

Dr. George V. Kulchar, San Francisco: Drs. Romansky and Rein have given a satisfactory, safe, ambulatory, effective method for the treatment of syphilis. It seems that this method has certain advantages over the use of sodium penicillin in aqueous solution. For one thing, I believe that the effect of the penicillin, as pointed out, is prolonged over fourteen days on the average, or six days longer than the ordinary course of sodium penicillin. The second advantage is the ease of administration. The fact that it does not require hospitalization is a great economic advantage. It however appears that there are certain disadvantages to this method. One is the higher incidence of reactions, about which Dr. Nichols spoke. In his series at Stanford University, Dr. Barnett informs me that with use of sodium penicillin in 200 cases there have been no reactions. The patients have been carefully scrutinized, so that I doubt much if any kind of reactions have been missed. At the San Francisco City Clinic, calcium penicillin in peanut oil and beeswax has been used for the last ten months. Dr. Koch, the director of venereal disease, has supplied me with the data from that series. Among 126 patients, 98 of whom completed treatment, there were 9 who had severe urticarial reactions. There are, I believe, several possible explanations for this higher incidence of reactions. Possibly calcium penicillin may act as an antigen to a greater extent than sodium penicillin. It may be that either the beeswax or the peanut oil—we know that peanut oil is an antigen—may serve to sensitize the patient. The more logical explanation is that the sensitization develops over a period of, say, nine to ten days. With a residue remaining in the buttocks over that period, it is possible that this may lead to sensitization. It would be interesting if a statistical study were made as to the actual time of appearance of reactions. In the series from the San Francisco City Clinic mentioned, there were 98 patients who are available for statistical analysis. The system that was used there consisted of administration of 150,000 units of penicillin in beeswax and peanut oil twice a day over a period of ten days. Of the 98 who are available for analysis, 27 have been observed from five to ten months. There were no clinical relapses; there were 11 per cent failures, based on the serologic reactions, practically the same criteria being used as those used by Drs. Romansky and Rein. There were no local reactions of any consequence, but 3.3 per cent of the patients had to stop treatment because of urticarial reactions. It is possible that with the use of Benadryl or the newer Pyribenzamine (N'pyridil-N'benzyl-N-dimethylethylenediamine) these reactions may be controlled.

Dr. Thomas H. Sternberg, Los Angeles: I congratulate Dr. Romansky on this paper and on the amount of work he put into the development of calcium penicillin in beeswax-peanut oil. He has made a valuable contribution to the entire field of chemotherapy. Shortly after Dr. Romansky began the treatment of his present series of patients, the Surgeon General authorized two additional centers for the purpose of studying this method of therapy. The first was located at Fort Bragg, N. C., under the direction of Major William Leifer, and the second at Camp Howze, Texas, and later at Camp Livingston, La., under the direction of Major Franklyn Grauer. These centers began to operate early in 1945 but were closed shortly after V-J day because of the rapid loss of patients coincident to demobilization. A total of 200 patients with early syphilis were treated, the schedule consisting of a single injection of 300,000 units of calcium penicillin in beeswax-peanut oil daily for eight days, for a total dosage of 2,400,000 units. The Romansky formula was used. Thirty-five of these patients were lost from observation immediately. The rest were followed four to ten months, a period so inadequate that conclusions cannot be drawn. Nevertheless, in 97 of the group the serologic reaction for syphilis was negative at the time of the last examination. Included in this group of 97 patients were 50 with seronegative primary, 31 with seropositive primary and 16 with secondary syphilis. The status of 62 patients was considered problematic, since the reagin titer was declining but the serologic reaction was still positive. There were six frank serologic or clinical relapses. In the summary of these data, it appears that the results are comparable to those that might be expected for the same period of follow-up with use of 40,000 units of sodium penicillin every three hours for sixty doses, for a total of 2,400,000 units. Penicillin blood levels following a single injection of 300,000 units of the penicillin-beeswax-peanut oil preparation (Romansky formula) were performed at Fort Bragg, N. C., by Kirby and Rammelkamp. They were unable to demonstrate penicillin in the blood for more than twelve to eighteen hours in the majority of patients. For this reason it is believed that a more adequate dosage, such as 600,000 units daily, either as a single or as a split injection, should be used in the ambulatory treatment of early syphilis.

Dr. Marion B. Sulzberger, New York: I, too, want to express admiration for the work reported here. I second the opinions of those who said that the reactions produced by this preparation are higher in incidence and perhaps somewhat different in character from those produced by the injections of aqueous solutions of penicillin or of penicillin in oil. My associates and I have seen a number of cases of local reaction at and around the site of injection of the penicillin and beeswax and oil which took the form of swellings with considerable redness. Some of these looked as though they were going to be large sterile abscesses. However, though disagreeable and uncomfortable, these lesions did not break down. None of the reactions we saw produced any serious or lasting consequences to the patient, but they did interfere with the use of this preparation. I think that Dr. Romansky and co-workers have brought us another, and extremely important, application of a well known, established principle of chemotherapy. It is my conviction that this penicillin suspension contrasts in effects with the penicillin solution in the same way as suspensions of bismuth preparations in oil contrast with the soluble salts of bismuth. Again, the same principle is involved when one administers epinephrine in oil and gets the prolonged effects which are not possible when epinephrine is administered in aqueous solution. Again, the same principle is used when one makes suspensions of antigens or allergens in oil or other mediums and thus tremendously increases or potentiates their immunologic effects. Landsteiner and Chase and their co-workers and particularly

Jules Freund have shown that one can take poorly antigenic or allergenic substances, such as tuberculin, and by suspending them in oily emulsions—for example, suspending tubercle bacilli in oily emulsions—can produce specific tuberculin sensitivity in laboratory animals. No such regular production of tuberculin sensitivity was possible before without an actual infection with living bacilli. I think that, as Dr. Kulchar said, it is not astonishing but is rather to be expected that this oil-wax suspension of penicillin should potentiate the antigenicity or allergenicity of penicillin and thus tend to produce a higher incidence of allergic reactions. Both beeswax and peanut oil are unknown, not chemically defined, substances, or rather mixtures, and it is impossible to maintain their constancy. Beeswax is a variable mixture of a good many different things, and beeswaxes are of many different qualities. They contain extractives from different kinds of flowers and plants, according to where the bees feed. American beeswax sometimes contains sufficient ragweed allergen, sufficient "oleoresins" of ragweed, to give positive reactions to patch tests in ragweed-sensitive persons. Peanut oils are variable natural products or mixtures I don't think this is a serious criticism of this mixture of substances, but it is a consideration which should impel the search for other simpler substitutes which might have the same or even better effects.

DRS. ALFRED COHN, THEODORE ROSENTHAL and ISAAK GRUNSTEIN, New York: This report of favorable results in treatment of early syphilitic patients with calcium penicillin in beeswax and peanut oil may help to open the road for penicillin therapy of ambulatory patients with syphilis. Using a different oily vehicle—sodium penicillin in water in oil emulsion—the Venereal Disease Research Unit of the New York City Department of Health initiated a study on the treatment of early syphilis in March 1945, and it is still in progress and essentially in the experimental stage. However, the results obtained thus far justify a short discussion. A total of 35 male patients with early syphilitic infections received daily injections of penicillin in water in oil emulsions over a period of five days. The daily dose ranged from 400,000 to 1,000,000 Oxford units of penicillin administered intramuscularly at either twelve or twenty-four hour intervals. After total dosages of 2,000,000 to 5,000,000 Oxford units respectively, definite clinical regression of the syphilitic lesions was observed among all patients at the end of active therapy. Titrated Wassermann tests and flocculation tests (Kahn, Kline and Mazzini) were done on the serum of each patient before treatment and were repeated each time the patient reported for reexamination. As a rule the positive Wassermann reaction reversed to negative within a period of five to twenty-eight weeks. Of the 35 cases, 10 were followed for a varying period up to six months and 15 for a period of seven to twelve months, while 10 cases had no adequate follow-up. The only clinical relapse observed thus far occurred sixty days after treatment. This patient suffered from seropositive primary syphilis and was treated over a period of five days with a total dosage of 4,200,000 Oxford units of penicillin. Among the 15 patients remaining under observation for a period from seven to twelve months, none showed any signs of a clinical relapse. The serums of 2 patients yielded gradually decreasing positive reactions to the complement fixation and flocculation tests over a prolonged period of eight to ten months. In a third patient with secondary syphilis the serologic reaction reversed from negative to positive eight months after treatment. Intramuscular injections of penicillin in water in oil emulsion did not produce any serious local or systemic effects except transitory pains at the site of injection. Herxheimer reactions of a mild degree occurred in most cases. . . . These findings corroborate also the observations of Jawetz, who demonstrated in experiments on animals that the action of penicillin apparently persists after disappearance of the drug from the blood stream.

DR. G. W. BINKLEY, Cleveland: My associate, Dr. Johnson, and I had an experience with a reaction to penicillin in beeswax and peanut oil which indicates the need for a battery of three antigens in order to do allergenic tests in the presence of cutaneous reactions. The man received six daily injections of calcium penicillin in oil and beeswax. A combined urticarial and edematous dermatitis appeared about the tenth day. His reaction was controlled with Benadryl given orally. After the process had cleared up, tests were done both intradermally and epidermally with sodium penicillin (we were unable to obtain calcium penicillin at that time) with peanut oil and beeswax. There was no reaction to the sodium penicillin or to the beeswax. A 30 mm. flare with pseudopods appeared as a reaction to peanut oil. It was believed that in his case he could safely receive penicillin in some other vehicle.

DR. SAMUEL AYRES JR., Los Angeles: My experience with this substance is rather limited; however, I have heard lately that some delayed reactions related to paraffinomas have been observed. I wonder if Dr. Romansky will tell us whether he has observed or heard of any such delayed reactions. Of course, beeswax is not the same as paraffin, not a mineral substance and, therefore, is supposed to be absorbed. I wonder if experimentation on animals has been carried out to the extent of proving how completely the beeswax is absorbed, whether there is any residue and what the likelihood would be of foreign body reactions developing late, say maybe one or two years afterward, because the ease of administration and the other advantages of this type of therapy certainly lend a strong temptation to use this instead of the other method of administration.

DR. MONROE J. ROMANSKY, Washington, D. C.: As regards the incidence of reactions, an important point is whether the mixture is given intramuscularly or subcutaneously. We have given over fifty thousand injections of this material at Walter Reed General Hospital. Patients receive one or two injections a day, depending on what the condition may be. Penicillin in aqueous solution is not used. If the penicillin-oil-beeswax is given subcutaneously there is a greater incidence of local reactions, which, on the basis of the way they respond to treatment, appear to be of an allergic nature. If given intramuscularly, the incidence of allergic reactions is about 3 to 5 per cent. The reactions after subcutaneous administration have at times been treated incorrectly by the use of hot applications, which tend to aggravate. Cold applications or the usual antiallergic therapy, including use of Benadryl, will prevent and minimize these reactions. In patients receiving single daily injections of penicillin-oil-beeswax for about eight days, the allergic reactions tend to occur on the fourth to the twelfth day after the last injection, reaching their peak on the fourth day after initiation and tending to subside thereafter. Penicillin-oil-beeswax has been given for as many as one hundred and fifty consecutive days and been well tolerated by patients. When I first started this work the question of paraffinomas was uppermost in my mind, in view of the history of paraffin when given parenterally. In view of this, biopsy specimens of muscle have been obtained from hamsters, rabbits and human beings who have received the mixture. These biopsy specimens were obtained from one week to six months after the injections. Beeswax tends to disappear somewhere between the tenth and twentieth day by the action of the phagocytes. Paraffin is not removed by phagocytosis. In rabbits, at the end of two to three months only minute oil cysts with thin walls were found. These tended apparently over a period to collapse on the basis of muscle activity. In biopsy specimens taken from 2 patients who expired from other causes about two months after the last injection, all that could be found were two small, 1 to 2 mm., thin-walled oil cysts in 1 patient and a 10 mm. cyst in the other. There was no evidence of beeswax. As far as I know, in the treatment of about 2,000 patients there has been no evidence of a paraffinoma developing. In infants and children, after an injection of the mixture a nodule may be palpable for some time, but I believe that this is usually due to the material being given subcutaneously instead of intramuscularly. To return to Dr. Sulzberger's question on the use of liquid petrolatum, carbowax, aluminum jels and other substances, I originally tried almost all of them. None gave the prolonged blood level that is produced with penicillin-beeswax-peanut oil. It is extremely important that the penicillin blood levels should be those which are therapeutic against the organisms causing the disease which is being treated and that the presence of penicillin in the urine without a satisfactory level in the blood does not suffice.

Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association
and Hygeia, the Health Magazine
Chicago

(Continued from page 785)

(NOTE.—*Following is the fifth chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of THE JOURNAL. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in THE JOURNAL. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—ED.)

CHAPTER 5. *The First Annual Session*

When President Nathaniel Chapman opened the proceedings of the first annual meeting of the American Medical Association in Baltimore on May 2, 1848 he used strong language in telling the profession of its responsibilities. In these days when organizations throughout the nation are attempting to create popularity for themselves by the practice of what has come to be called "public relations," we hear similar indictments. The words of Dr. Chapman published about a hundred years ago resound almost as if they were of yesterday. He said:

> "This assemblage presents a spectacle of moral grandeur delightful to contemplate. Few of the kind have I ever witnessed more imposing in its aspect, and certainly none inspired by purer motives or having views of a wider range of beneficence. The profession to which we belong, once venerated on account of its antiquity—its various and profound science—its elegant literature—its polite accomplishments—its virtues—has become corrupt and degenerate to the forfeiture of its social position and, with it, of the homage it formerly received spontaneously and universally. . . ."

Dr. Chapman then proceeded to tell the medical profession of his day what has been so frequently told to it in the years that have passed: that the medical profession always cleans its own house, that it does not need extraneous assistance in bringing about reform. Perhaps in anticipation of charges that might be made at some later date, he declined in advance to nomination for reelection to the presidency, saying "Rotation in office, I am persuaded, is the vital principle of every institution in this country. Especially do I consider it so in relation to our own association, national in its objects and constitution. Every section of the country is here represented, and equally engaged in a common cause. No monopoly of honor or privileges must be permitted to any one portion of it. I wish our conduct always to be dictated by liberality, justice and equality."

There were 195 delegates, and the Committee on Nominations was instructed to bring in the names of at least three nominees for each office. Moreover, it was required that the person elected should receive a clear majority of those voting.

The convention turned its attention to the sophistication and adulteration of drugs. Dr. A. H. Stevens of New York was elected President. Then came a number of extraordinary reports of the special committees which had been appointed in previous years. Early in the session Dr. J. C. Warren of Boston, who was first to operate on a patient under ether anesthesia in the Massachusetts General Hospital in 1847, addressed the meeting in reference to the preparation and value of chloric ether as a substitute for sulfuric ether and chloroform, whereupon Dr. F. H. Hamilton of Buffalo introduced a resolution "That, considering the present limited amount of authenticated facts in relation to the danger or safety of anesthetic agents in medicine, surgery and obstetrics, this association is not now prepared to determine upon their value or the propriety of their use, and that the subject be referred to a Special Committee who shall report at the next annual meeting." The resolution was referred to a committee and apparently not made the subject of any later report.

In addition to questions related to medical education and the publication of scientific papers, we find an interesting resolution asking the Committee on Hygiene to direct its attention to the following subjects: First, What is the influence likely to be produced by the extensive introduction of tea and coffee in the diet of persons under the age of puberty? Second, What is the influence of the substitution of the luxuries tea and coffee, as food, on the health of the laboring classes?

The reports of the committees occupy the rest of the volume of the Transactions of the American Medical Association for 1848. Volume I was printed for the Association by T. K. and P. G. Collins in Philadelphia. It contains some documents that are classic.

COMMITTEE ON MEDICAL SCIENCES

The Committee on Medical Sciences, under the chairmanship of W. T. Wragg of South Carolina, reported that it had examined all the journals published during the previous year, that there was too much literature, so that there was an embarrassment in choosing well rather than in collecting abundantly. They did not consider it desirable to limit themselves merely to contributions from America but had collected from all over the world. They then presented some fifty pages of abstracts from the medical literature of the day, dealing with a great variety of subjects.

COMMITTEE ON PRACTICAL MEDICINE

The Committee on Practical Medicine had been charged to report on the more important improvements effected in this country in the management of individual diseases and to report on the progress of epidemics. This committee also had examined the medical periodicals of the day and concluded quite wisely that great discoveries are not really made in any one year. It singled out for special notice a procedure developed by Dr. Gurdon Buck of the New York Hospital which was the multiple scarification of the walls of the throat in the presence of edematous swelling or what was then called "oedematous laryngitis" in its suffocative stage. This, no doubt, was the condition from which George

Washington died and would be called today either "septic sore throat" or "diphtheria."

Then came a rather prolix discussion of epidemics, with special attention to the frightful condition of emigrants coming from Europe, contrasting particularly the nutrition, cleanliness and general hygiene of the German emigrants with that of the Irish, who arrived "in most cases enfeebled from the want of sustenance, and on shipboard, destitute of supplies of wholesome food, depressed of mind, clothed in filthy garments and crowded and confined in air rendered pestiferous by the excrementitious matters eliminated from their own bodies." It called attention to the fact that thousands had perished on the voyages to the United States and Canada. From one ship, the *Virginia,* bound from Liverpool to Quebec, with 470 passengers, 158 were buried at sea.

During the year 1847, 100,000 souls left the British Isles for Canada. More than 5,000 of these died en route and another 8,000 within a few weeks after their arrival. The disease from which these people perished was typhus in its genuine form, and in some ships smallpox, dysentery and measles swelled the amount of mortality. There was much discussion of the ability to distinguish between typhus fever and typhoid fever.

As a supplement to its report the committee included the complete statement of Gurdon Buck on "Oedematous Laryngitis" together with pictures in color of the condition concerned and of the instruments especially designed by him for performing his operation.

THE COMMITTEE ON SURGERY

The Committee on Surgery was supposed to prepare a report on all the important improvements in the management of surgical diseases in America during the year, to which it succinctly replied "Neither brilliant discoveries nor any extraordinary improvements in surgery marked the past year." The committee, nevertheless, decided to make a report of progress, and the major portion of its report deals with cutting for stone and the surgical treatment of aneurysms. Dr. Daniel Brainard of Chicago had found iodine useful as a substance to be injected into infected wounds.

Then comes the report on anesthesia. Eighteen months had elapsed since the introduction of ether by Morton. A large and intelligent body of the medical community, including some of the most eminent surgeons, considered the question settled. They considered the dangers of etherization so inconsiderable as to justify its use prior to all surgical operations. Another class of surgeons wished to limit the use of anesthetics to severe operations and to discourage their general employment. A small portion of the profession objected altogether to the use of anesthetics as dangerous and harmful in their tendency.

The committee refused to take a definite stand. It did, however, offer the opinion of Dr. Henry J. Bigelow of Boston, and it took pride in the fact that anesthesia was an American contribution. At the same time the committee noted with regret that the early history of the discovery "is encumbered with angry disputes amongst rival claimants for the honor, and that attempts were made by those most intimately interested in the claim. . . ." Much consideration is given to the claims of Horace Wells, but it is stated clearly that Wells abandoned his experiments begun in 1844, and that the first successful experiment was performed by William T. G. Morton, a dentist of Boston, on a patient from whom he extracted a tooth on Sept. 30, 1846. Dr. Henry J. Bigelow had read a paper in Boston on Nov. 3, 1846. It was published in the *Boston Medical and Surgical Journal* November 18. Within six weeks of the publication of that paper, ether had been tested and was being warmly advocated among surgeons in London. The report then lists all the various surgeons in the United States who had already used ether in surgical operations and it was noted that fatal effects following the use of chloroform had been more frequent than from ether.

Incidentally the committee reported also that it had received a number of letters about the curability of cancer and the results of operations on this class of tumors, but apparently this was too much for the committee and it made no report but merely submitted the letters to the convention.

COMMITTEE ON OBSTETRICS

The Committee on Obstetrics had the duty of preparing a report on all the important improvements in obstetric art and of the management of diseases peculiar to women and children. Obviously the matter of chief concern was the use of the anesthetics in childbirth. The committee got itself into the usual argument that labor is a physiologic or natural process and that pain should therefore be endured, but the committee attached little importance to this objection. It wisely decided that if one adopted that point of view it would be impossible even to give remedies to the parturient woman. Already anesthetic agents had been used in 2,000 cases and, as far as the committee was able to learn, without a single fatal result and few, if any, untoward results.

The committee also suggested that doctors try out chloroform on themselves as a means of dispelling their vague apprehensions in relationship to it. Indeed the committee recommended that the doctor begin with 20 to 30 drops and gradually increase the quantity to find out how to use the chloroform safely and to acquire tact and confidence in giving it to others.

There was much discussion of the relative advantages of ether and chloroform for different types of cases, chloroform being considered more convenient and ether safer, but both efficient.

To this report were appended half a dozen communications from practitioners who had used anesthetics in labor.

COMMITTEE ON MEDICAL EDUCATION

The Committee on Medical Education was charged with preparing a report on the general condition of medical education in the United States in comparison with medical education in other enlightened nations and to note particularly the quality of instruction, the number of pupils and the requirements in various states.

The committee pointed out that in most foreign countries the standard of qualifications necessary for a doctorate in medicine was higher than in the United States and that the preliminary education was broader and more thorough. As a result of the previous meeting of the American Medical Association, some medical schools had already lengthened their curriculums and added other courses of instruction. Incidentally, the committee noted that in Harvard University candidates who had not received a college education were subjected to an examination on natural philosophy and the Latin language and were required to translate *ad aperturam libri* Cicero's orations. The same practice was followed in the medical societies of Massachusetts in their examinations for licenses to practice.

The committee had already decided that there were too many doctors in the United States, the proportion being five times as great as in France. It was urged that private teachers exercise greater circumspection of students taken into their offices. The committee felt that the oversupply of doctors was largely responsible for the rise of quackery and charlatanism, and it urged that a proper medical education could be had only by spending a certain amount of time in a hospital in the actual care of patients.

COMMITTEE ON MEDICAL LITERATURE

Looking back on the perspective of one hundred years, the report of the Committee on Medical Literature, under the chairmanship of Oliver Wendell Holmes and including such distinguished men as Enoch Hale, G. C. Shattuck Jr., Daniel Drake, John Bell, Austin Flint and W. Selden, merits first place. There are some sections so clearly of the style and manner of thought of Oliver Wendell Holmes that they merit frequent quotation. There is an adequate record of the history of medical publications in the United States, with complete reports of existing medical journals.

A typical medical journal of the time is thus described:

> The first part of each number is devoted to original articles, consisting of essays, histories of epidemics and endemics, series of cases and single cases, and accounts of operations. Occasionally a more detailed and comprehensive history of some disease is introduced under the name of *monograph,* and not unfrequently extensive statistical tables are given, bearing especially upon surgical and obstetrical practice. Then follow *Reviews* or formal examinations of works recently published, usually analytical in character and having for their principal object the book rather than the general subject of which it treats. To this division succeeds a miscellaneous and heterogeneous assemblage of *bibliographical notices;* the sweepings of the critical *atelier;* the rinsings and heeltaps of the critical banquet; a necessary part of the editor's prospectus, but one which is least gratifying to minute inspection. Here the importunate friend receives his expected compliment, the dull dignitary is pacified with his scanty morsel of eulogy, the Maecenas is paid in fair words for his patronage; the book which must be noticed and has not been read is embalmed in safe epithets and inurned in accommodating generalities. Lastly, a considerable part of the number is made up of selections, either taken promiscuously from other journals and recently published works, or, in the better managed periodicals, classified so as to present a summary of the recent progress of science in its several departments.

The committee found that a great proportion of a medical journal was made up of quotations from other medical journals, so that all the medical journals were a good deal alike, since there were very few original articles published of any merit and they were found again and again repeated in the medical journals.

Following the discussions of the periodicals come discussions of the books in each of the important medical subjects and then in some half dozen pages a witty analysis of medical writings, classic in its diction and in its consideration. Special attention was paid to the so-called introductory lectures, which are really the opening statements delivered by the deans or professors in the medical schools to the incoming students. Says the report:

> They must not be judged too harshly, for they are delivered to young men, who like high seasoning, and they naturally partake somewhat of the character of advertisements. Many of them are agreeable and appropriate performances, but others are open to severe comment. Turgid and extravagant attempts at eloquence, a fondness for effete Latin quotations, a parade of scholastic terms where simple ones only are called for, an inclination to adopt the cant phrases of political and literary writers, are the common faults of these productions. The physician should remember, that his style has no more occasion for pomp of oratory and glitter of epithet, than his costume for the gold lace and feathers which belong to the military chieftain. Nothing is more offensive than an attempt to tell that which should be said plainly and decently, in high flown language. It vitiates the taste of the student who listens to it or reads it, and exposes the profession to derision from those who cannot value the important truths disguised by such ill chosen finery.

COMMITTEE ON PUBLICATION

The Committee on Publication, headed by Isaac Hays, reported that it had printed 2,500 copies of the Conventions of 1846 and 1847 and they still had 800 copies left.

There is a complete list of the members who paid $3 each for membership in the Association. Then come a number of communications dealing with the ethics of the pharmaceutical profession and an exposé of the adulteration and falsification of drugs sold in the United States.

The committee, which had been supposed to ascertain the total number of doctors in the United States, reported for the states of Virginia, Delaware and Massachusetts. And finally there were two scientific papers and lists of the officers and members of the American Medical Association.

A good index completed what is even for these times an extraordinarily interesting volume.

(To be continued)

Clinical Notes, Suggestions and New Instruments

HAY FEVER AND ASTHMA FOLLOWING MAXIMUM EXPOSURE TO RAGWEED

FRANK L. ROSEN, M.D.
Newark, N. J.

According to Durham,[1] the highest ragweed pollen count in the United States has been recorded near Indianapolis. Clinical corroboration of this observation was afforded me when I was stationed for the ragweed seasons of 1944 and 1945 at Wakeman General Hospital, Camp Atterbury, Ind., some 35 miles south of Indianapolis.

The following case report is illustrative of many of a similar nature which will plague the Disability Rating Boards of the Veterans Administration for many years, requiring solomonic wisdom for fair adjudication both for the veteran and the government.

REPORT OF CASE

A white soldier aged 21 was admitted on Aug. 26, 1944 to the allergy ward of Wakeman General Hospital, Camp Atterbury, Ind. He had been affected by severe sneezing, stuffed nose, redness and watering of the eyes for the past week. There was no previous history, personal or familial, of hay fever, asthma or other allergic manifestations. However, the patient admitted he could have had mild sneezing in the summer or autumn without distinctly recollecting it. This was his first summer in the middle west; previously he had always resided in Newark, N. J.

Physical examination on admission revealed that the patient had severe symptoms of hay fever with a pale, boggy, intensely swollen nasal mucosa, injected conjunctivas and a right otitis media, nonsuppurative. Intracutaneous ragweed tests were decidedly positive. Serologic tests and urinalysis were normal. The blood count was normal except for a 10 per cent eosinophilia.

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[1] Durham, O. C.: The Pollen Count of the Air in North America, J. Allergy 6: 128 (March) 1935.

Acute symptoms of hay fever persisted for about two weeks, than subsided gradually. No relief was afforded by ephedrine nose drops or ephedrine-phenobarbital capsules. The patient was reclassified for limited service, than returned to duty on Sept. 27, 1944.

He did well until Oct. 23, 1944, when he was readmitted to the allergy ward. This was well past the end of the ragweed season for that area. He had been wheezing for the past few hours. Nasal and ocular symptoms were absent, and this was the first asthma attack he had ever experienced.

Physical examination revealed a patient with moderate asthma; the lungs showed asthmatic rales and breath sounds throughout. The ear, nose and throat consultant reported that the nose showed swelling of the turbinates, especially the right, bathed in watery secretions. Purulent secretion or polyps were not observed. The frontal sinuses transilluminated clear, the antrums fair.

Laboratory procedure disclosed the following: A roentgenogram of the chest revealed normal conditions. A roentgenogram of the sinuses revealed a circumscribed, rounded density arising from the floor of the right maxillary antrum, and another from the medial wall, representing a polyp formation or mucocele. Only a small amount of aeration was visualized in the upper portion of the antrum. There was thickening of the lining membrane of the ethmoidal cells on the right side. The remainder of the paranasal sinuses showed normal aeration throughout. Urinalysis and serologic tests were normal. The blood count was normal except for an 11 per cent eosinophilia. Thirty-six intracutaneous dermal tests with common inhalants, contactants, epidermals and foods were negative except for buckwheat, which was decidedly positive; orange, moderately positive, and ragweed, slightly positive. (Ragweed was definitely positive during the ragweed season.)

The patient was placed on a diet without buckwheat and citrus fruits, and ephedrine sulfate-phenobarbital capsules and saturated solution of potassium iodide were administered three times a day. Moderately severe asthma which required epinephrine injections at least once a day persisted for about ten days. The attacks tapered off, averaging about one a week for the next six weeks. A repetition of the blood smear at this time disclosed an eosinophilia of 8 per cent. Examination of the nose revealed slightly pale and boggy nasal mucosa, though nasal and paranasal symptoms had not been observed for the past two months. A follow-up roentgenogram of the sinuses showed moderate clouding toward the floor of the right antrum caused by membranous infiltration or congestion; the sinuses were otherwise normal. On Jan. 8, 1945, after a three week symptom-free period, the patient was given a medical discharge from the Army because of bronchial asthma.

The patient was next seen, after he and I had both become civilians, in my office in Newark, N. J., on May 13, 1946 (sixteen months later). He had been perfectly well until one month previous, when he had begun to observe difficulty in breathing at night. There had not been any nasal or paranasal symptoms or other manifestations of allergy. He had been on a normal diet.

Examination revealed a well developed man who appeared to be breathing normally. The lungs showed a slight prolongation of the expiratory phase of respiration throughout, with no rales. The nasal mucosa was slightly pale and boggy. Intracutaneous allergy tests gave slight positive reactions to dust, mixed trees, timothy and ragweed.

COMMENT

In all probability this patient will now require prolonged allergic management. The problem arises as to whether he and others like him are entitled to medical care from the Veterans Administration and to disability ratings if the asthma is of sufficient frequency and intensity. The Veterans Administration, in many cases, reasons that the person is potentially allergic because of hereditary factors. The allergic chain of symptoms could certainly have developed whether or not the patient was in the armed forces. On the other hand, the ragweed-sensitive patient who is stationed in an area of dense ragweed pollination may suffer accentuation of various allergic symptoms for many years. The patient states, and in my opinion justly, that if he was not in the Army he would never have moved to such an area. The problem is extremely complex, and there are as many different decisions as there are Veterans Rating Boards. To insure fairness to all concerned, decisions in cases of this type should be made by trained allergists.

SUMMARY

A case of hay fever followed by asthma occurred after maximum exposure to ragweed pollen in a soldier who had previously lived in an area with a much lower ragweed pollen content. Previously he had not had hay fever or other allergic clinical symptoms. The problem of medical care and compensation for veterans in cases of this type is one which will face the Disability Rating Boards of the Veterans Administration for many years.

33 Johnson Avenue.

Council on Foods and Nutrition

The question of the essentiality of fatty acids in human nutrition is discussed in this article. It was prepared by the authors at the request of the Council and has been authorized for publication.

JAMES R. WILSON, M.D., *Secretary.*

ESSENTIAL FATTY ACIDS AND HUMAN NUTRITION

ARILD E. HANSEN, M.D., Ph.D.
Galveston, Texas
and
GEORGE O. BURR, Ph.D.
Minneapolis

Interest with regard to the significance of fat in the diet was evidenced even by early investigators in the field of nutrition, and these workers were led to believe that the only role of dietary fat was to serve as a rich source of calories. Later observers, however, emphasized its additional importance as a source and as a vehicle for the absorption of certain vitamins. In 1929 the Burrs[1] discovered the essential nature of certain fatty acids in the nutrition of the rat. For the first time, then, a specific function could be attributed to fat other than its energy producing property and its action as a vitamin carrier. It must be emphasized that the observation proving linoleic acid and arachidonic acid to be dietary essentials was not made until young laboratory animals had been maintained on diets extremely low in fat for relatively long periods of time. The likelihood that a human infant would subsist for a prolonged period on a diet practically devoid of fat, yet complete as regards other known dietary essentials, is practically nil. Hence the recognition in infants and children of any characteristic clinical picture or type of malnutrition which may result from the specific lack of certain fatty acids in the diet has not been demonstrated conclusively.

In this presentation, in addition to a consideration of the experimental results which have been observed with laboratory animals on low fat diets, as well as the effect of the administration of certain fatty acids to these animals, an attempt will be made to summarize the data which have a bearing on the possible importance of the essential fatty acids in human nutrition.

From the Department of Pediatrics, University of Texas School of Medicine (Dr. Hansen), and the Division of Physiological Chemistry, University of Minnesota School of Medicine (Dr. Burr).

[1] Burr, G. O., and Burr, M. M.: A New Deficiency Disease Produced by the Rigid Exclusion of Fat from the Diet, J. Biol. Chem. **82**: 345, 1929; On the Nature and Role of the Fatty Acids Essential in Nutrition, ibid. **86**: 587, 1930. Burr, G. O.; Burr, M. M., and Miller, E. S.: On the Fatty Acids Essential in Nutrition, ibid. **97**: 1, 1932.

It is quite evident that the method of approach for establishing the human need for these fatty acids cannot be the same as that used for experimental animals. Furthermore, the fact that adequate direct methods for determining the amount of linoleic and arachidonic acids in blood serum and animal tissue have not been available has been an additional handicap in the prosecution of studies with human subjects. Consequently, much of the evidence we have for the human need for the essential fatty acids is indirect.

ESSENTIAL NATURE OF FATTY ACIDS IN ANIMAL NUTRITION

The term "essential fatty acid" was introduced in 1930 and since that time has been used to designate a group of unsaturated fatty acids which will stimulate renewed growth of rats after they have reached a plateau on a low fat diet. Careful exclusion of the essential fatty acids from the diet in rats leads to (1) development of scaly skin and caudal necrosis, (2) decided retardation of growth, (3) increased water consumption and (4) early death. Any or all of these signs may be used for a quantitative assay of the needs for essential fatty acids. Other more or less specific effects of the deficiency are histologic changes in the ovaries, uterus and other tissues; poor ovulation, reproduction and lactation in the female, male sterility, high respiratory quotients and high metabolic rates, kidney lesions and hematuria. The scaly skin in rats, which is very striking in a dry climate, may be suppressed by high humidity. The time of appearance of the first definite symptom (scaly skin) depends largely on the amount of unsaturated acids stored in the body fat of the young. Hence any animal which has had access to a high fat diet before the experiment is started will maintain its normal appearance for a long time because of the low rate of metabolic use of stored essential fatty acids.

TABLE 1.—*Purified Fatty Acids Tested for Activity in Curing Fat Deficiency in Small Animals*

Positive Response	Negative Response
Linoleic	All saturated acids
Linoleyl alcohol	Oleic
Linolenic	Elaidic
Arachidonic	12 Oleic
Docosahexenoic *	Erucic (13 docosenoic)
Hexahydroxystearic	Ricinoleic (12 hydroxyoleic)
	Linolelaidic
	9,11-Linoleic
	α Eleostearic (9,11,13-linolenic)
	Dioxidostearic
	Trihydroxystearic
	Tetrahydroxystearic
	Chaulmoogric
	Clupanodonic † (Octa decatetrenoic)

* Not purified by crystallization but by fractional distillation of the ester.
† This preparation was found to be toxic

In table 1 are listed[2] the purified fatty acids that have been tested for their activity in curing a fat deficiency in small animals. Some of these acids have been used only once in a few animals. Linoleic, linolenic and arachidonic acid have been studied most extensively. Linolenic acid and the higher acids of fish oil bring about renewed growth in rats without curing the skin. Only linoleic acid and arachidonic acid give complete cures, but, strictly speaking, only one of these is essential. If either linoleic or arachidonic acid is added to the diet, a complete cure of the deficiency symptoms will take place. However, since linoleic acid is of plant origin and arachidonic is of animal origin, the former should be considered the primary dietary essential.

The rate of use of these unsaturated fatty acids determines the level of requirement. It has been found that prophylactic daily doses of about 20 to 25 mg. of linoleic acid promote good growth and reproduction in rats, but for optimum lactation 100 mg. is recommended. In curative experiments 50 to 100 mg. daily appears to be distinctly superior to lower doses. Assuming that the minimum adequate daily intake of linoleic acid is 100 mg. for a rat consuming 10 Gm. of diet, the linoleic acid requirement can be set at about 1 per cent of the diet. Since it has not yet been possible to establish the requirement for man through direct experimentation, a corresponding level of intake (1 per cent of the diet) has been recommended in human nutrition on the assumption that human beings and rats have the same metabolic requirement for this food factor.

By far, most of the work on the essential fatty acids has been done on the rat as an experimental animal. However, Hansen and Wiese[3] found in maintaining young dogs on a low fat diet that the most striking observation with these animals was the development of dryness of the hair and skin and flaky desquamation of the skin. Addition of fresh lard to the diet resulted both in preventing the appearance of these conditions and in restoring the abnormal skin to a normal state. A fat deficiency syndrome characterized by disturbance in growth, a dandruff-like dermatitis and early death also has been produced in mice.[4] These symptoms were cured by the addition of lard to the diet.

STUDIES BEARING ON RELATION OF UNSATURATED FATTY ACIDS IN HUMAN SUBJECTS

Experimental Use of Diets Very Low in Fat.—Clinical Observations: Comparatively few studies with human subjects have been carried out in which the effect of diets extremely low in fat has been observed for an extended period of time. Von Gröer[5] in 1919, prompted by Aron's study with rats on low fat diets, maintained 2 infants on a diet of skim milk for a period of nine months. He observed that both infants showed poor growth but attributed this to a respiratory tract infection from which both infants suffered severely and for a much longer time than other infants who were similarly affected in the hospital ward. One of the children on the low fat diet developed evidence of exudative diathesis, and the diet was discontinued because of the lack of appetite. Holt and his co-workers[6] in 1935 kept 3 infants aged 4 to 6½ months on a diet containing about 1 Gm. of fat per day for two to seven days. One of these infants, they noted, developed spasmodic bronchitis and an eczematous eruption, which cleared when fat was restored to the diet and recurred when fat was again eliminated. Apparently the authors did not consider this phenomenon a mere coincidence. In 1937 Chwalibogowski[7] reported having maintained 2 infants from birth to

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[2] Burr, G. O.: Significance of the Essential Fatty Acids, Fed. Proc. **1**: 224, 1942.

[3] Hansen, A. E., and Wiese, H. F.: Studies with Dogs Maintained on Diets Low in Fat, Proc. Soc. Exper. Biol. & Med. **52**: 205, 1943.

[4] White, E. A.; Foy, J. R., and Cerecedo, L. R.: Essential Fatty Acid Deficiency in the Mouse, Proc. Soc. Exper. Biol. & Med. **51**: 301, 1943.

[5] von Gröer, F.: Zur Frage der praktischen Bedeutung des Nahr Wertbegriffes nebst einigen Bemerkungen über das Fett minimum des menschlichen Saüglings Biochem. Ztschr. **93**: 311, 1919.

[6] Holt, L. E., Jr.; Tidwell, H. C.; Kirk, C. M.; Cross, D. M., and Neale, S.: Studies in Fat Metabolism: Fat Absorption in Normal Infants, J. Pediat. **6**: 427, 1935.

Experimentaluntersuchungen über kalorisch Ernährung des Säuglings, Acta pædiat.

13 and 15 months of age on a diet consisting of skim milk, sugar and cereal. Later, fruit compote and carrots were added to the diet, and both children were given ultraviolet radiation at various intervals. Although no skin manifestations are described by the author for either child, both were found to be anemic when 11 to 12 months old and both suffered from repeated infections. During the fifteen months observation, 1 child had two attacks of grip, 2 of sore throat and 1 of pyuria. The other child had sore throat, grip and measles. The low fat diet in the latter instance was discontinued at the end of thirteen months because of lack of appetite. During none of these observations were any attempts made to determine the kind or amount of fat synthesized by the body.

Hansen and his co-workers have had the opportunity to observe the effect of a practically fat free diet on 4 human subjects. Preliminary observations were made with 2 normal infants for a period of ten weeks. Both infants suffered from attacks of impetigo and prickly heat which were resistant to the usual forms of treatment. Brown, Hansen, Burr and McQuarrie[8] in 1938 reported studies on an adult subject who was observed for a period of six months while on a low fat diet. When this same diet was fed to young rats, they developed the typical fat deficiency syndrome. Subjectively, in the adult under observation the most striking effect was the absence of the sensation of fatigue and a decrease in the migraine-like headaches from which he had suffered periodically. The respiratory quotient showed a slight increase, which response was similar to that noted in rats. The fourth instance[9] in which an extremely low fat diet was used for a prolonged period in a young human subject was that of a child with chylous ascites. The diagnosis was made when the child was about 3 weeks of age, at which time about a liter of creamy fluid was removed from the peritoneal cavity. Because the absorbed fat could not enter the blood stream, it was believed that placing the child on a low fat diet might decrease the fluid accumulation in the abdominal cavity. At first the diet consisted of concentrated skim milk and the usual vitamin supplements, but later vegetables and cereals were added. He was maintained on this type of regimen until he was 23 months of age. Although growth and development of the patient were fairly satisfactory, he never had the appearance of a robust child. He acquired a number of respiratory infections, and it appeared to the staff physicians that he reacted to these more severely than is normally expected. The most striking clinical finding, however, was with reference to the skin. The child became afflicted with impetigo on two occasions, and these infections were much more difficult to clear up than those encountered in the other infants in the same ward who were similarly affected. During his first summer, at the age of about 8 months, he developed a prickly heat eruption, which dermatitis persisted for months into the cooler weather, long after other infants in the same ward having the same type of rash had recovered. During the last half of the first year he developed eczematous patches on his body and face at various times, but these responded quite well to treatment with crude coal tar ointment.

In summary, on the basis of the work of various authors regarding clinical observations with human subjects maintained on diets very low in fat, it is apparent that no specific clinical syndrome develops during a period of one to two years. It may be pointed out, however, that the duration of sustenance on this type of diet in the patients studied thus far is short compared with the length of time that is necessary to produce distinct symptoms in experimental animals. Even in the diet of the experimental animal evidence of lack of fat in the diet requires a relatively long time to develop. For example, in the rat symptoms and signs do not develop until about one-half of the time from birth to maturity. Likewise in the dog the interval for the development of dermatologic signs is almost as long, relatively. Human infants maintained on low fat diets even for the periods mentioned are only one-sixth to one-eighth of the period from birth to maturity, or, comparatively speaking, one-third of the time required to develop a deficiency in experimental animals.

Serum Lipid Studies in Patients on a Low Fat Diet: Early observations of Hansen and Burr[10] showed that the serum lipids of rats suffering from the fat deficiency syndrome had lower iodine numbers than those of control animals. Likewise, in the preliminary studies of Hansen with the 2 infants on a low fat diet a similar decrease from the normal was noted in the iodine value of the blood fat. Periodic determination of the serum lipids in the patient with chylous ascites revealed the iodine values of the total fatty acids to be definitely lower than those of normal infants. The degree of unsaturation of the fat in both the acetone insoluble (phospholipid) and acetone soluble (glyceride + cholesterol ester) fractions was abnormally low. On one occasion it was possible to separate the triglyceride fatty acids from the cholesterol ester fatty acids, and in this instance it was found that the iodine numbers of the fatty acids in both portions were low. Studies by Wiese and Hansen[11] with dogs on low fat diets revealed that the greatest drop in the iodine number appears in the cholesterol ester fatty acids. Normally the cholesterol ester fatty acids are the most highly unsaturated of the fatty acids in the blood serum. The iodine number of the total fatty acids in the adult subject was also found to be decreased while on the low fat diet. It was possible to brominate the fatty acids in the serum in this case, and the findings with regard to the linoleic and arachidonic acids expressed as percentages of the total fatty acids are given in table 2.

TABLE 2.—*Linoleic and Arachidonic Acids Expressed as Percentages of Total Fatty Acids*

	Arachidonic Acid	Linoleic Acid
Normal diet	3.2	5.7
Low fat diet (for six months)	1.87	3.2

In all the serum lipid studies of the subjects on low fat diets it was found that the total amount of fatty acids in the various fractions has been within normal limits. It appears from these data that the animal organism is able to synthesize sufficient fat to maintain a normal level of blood lipid but apparently is unable to synthesize certain highly unsaturated fatty acids.

Relatively Low Fat Intake Because of Faulty Absorption.—Well controlled experiments which attempt to determine the effect of the lack of dietary fat on human subjects are relatively meager; however, there are important clinical conditions in which a defect in fat absorption is present. In patients with steatorrhea not only is there faulty absorption of fat, but, in addition, these patients often are advised to use low fat diets and there results a situation which is equivalent to maintenance on a diet quite low in fat. This condition usually exists for a prolonged period. It has long been known that patients having difficulty with absorption of fat may develop a deficiency state of one type or another. However, it has never been fully ascertained whether or not the malnutrition which is seen in patients with idiopathic steatorrhea or the celiac syndrome may be due in part to the specific lack of certain fatty acids. A clinical observation which is often made in some cases of a prolonged steatorrhea is the presence of dermatologic abnormalities. This observation may be of some importance in view of the fact that in experimental animals one of the chief manifestations of a fat deficiency is the development of an abnormality of the skin. In 1932 Bennett, Hunter and Vaughan [12] reported the presence of skin eruptions in 7 cases of idiopathic steatorrhea. These authors state that "The frequent occurrence of skin lesions appears too striking to be mere coincidence." Konstam and Gordon [13] also confirm this observation and report pruriginous vesicular dermatitis in a man aged 55 with steatorrhea. Riley [14] reports the finding of "large circumscribed erythematous areas" in a boy aged 17 years with idiopathic steatorrhea. In a 1944 report by Luzzatti and Hansen [15] on 10 infants and children in whom the diagnosis of celiac syndrome was made, 3 of the patients showed evidence of macular rash or eczematous lesions. Further evidence that some of the above patients possibly may actually suffer from the lack of specific fat is suggested by blood lipid studies. The authors found that the iodine number of the fatty acids in patients with the celiac syndrome was exceptionally low, 70 to 86, compared with the normal range of 98 to 113 for their control subjects in the same age group. The amount of fatty acid in the various fractions of the blood lipids was essentially normal, but the degree of unsaturation was abnormally low in all fractions. This indicates again that these patients can synthesize saturated fatty acids from sources other than dietary fat but are unable to synthesize unsaturated fatty acids to a sufficient extent to maintain the normal degree of unsaturation of the blood lipids. The establishment of a normal range for the iodine number of the serum fatty acids in human subjects and the possible nutritional significance of maintaining this degree of unsaturation in the blood is further suggested by the clinical findings and blood lipid analyses in patients with eczema.

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Study of Patients with Eczema [15a]—It was first reported in 1933 by Hansen [16] that some infants with eczema appeared to be definitely benefited clinically when fats containing the essential fatty acids were added to the diet. This observation led to a study of the blood lipids of eczematous and normal noneczematous infants and children. It has been found by Hansen and his co-workers and also by Finnerud, Kesler and Wiese [17] using some 150 noneczematous control subjects and 180 eczematous patients that while there is no significant difference in the total amount of fat in the serums of the two groups of individuals the relative degree of unsaturation of the serum fatty acids in the patients with eczema is definitely less than in that of control subjects. The serum fatty acids of 82 per cent of infants under 2 years, 74 per cent of children from 2 to 15 years and 55 per cent of older subjects show iodine numbers *below the normal range of 95 to 130.* These findings have been confirmed by Faber and Roberts [18] as well as by Schornstein.[19] On the other hand, Ginsberg, Bernstein and Iob [20] found no difference between the iodine number of the serum fatty acids for patients with infantile eczema and those for normal subjects.

Pooled samples of lipid extracts of the serum were studied by Brown and Hansen [21] wherein it was found that the content of arachidonic and linoleic acid was less in the patients with eczema than in the pooled samples of the lipid extract of control subjects. These acids were determined as polybromides and tetrabromides and the values as percentage of the total fatty acids in the serums are summarized in table 3.

It has been found further by Hansen,[16] by Cornbleet and Pace,[22] by Finnerud, Kesler and Wiese [17] and by Ginsberg, Bernstein and Iob [20] that the addition of fats rich in linoleic and arachidonic acid such as fresh lard, corn oil and raw linseed oil to the diet of eczematous patients has resulted in a definite amelioration of the skin eruption in a considerable portion of the patients and in a complete clearing of the skin in some instances. In most of the patients studied by Hansen and by Finnerud and his co-workers the skin eruptions were resistant to the usual forms of therapy, yet more than 50 per cent of these patients have shown great improvement. The clinical response to the addition of one of these fats to the diet has been most evident in those cases in which the iodine number of the blood fat has been below the normal range. Improvement in the condition of the skin has usually been accompanied by a rise in the iodine number of the serum fatty acids to a normal level. Whether or not these responses in the condition of the skin of eczematous patients to the ingestion of fat containing the essential fatty acids accompanied by a rise in the iodine number of the serum fatty acids is a result of supplying

TABLE 3—*Arachidonic and Linoleic Acid in Patients with Eczema*

Pooled Samples	Arachidonic Acid % of T. F. A.	Linoleic Acid % of T. F. A.
35 control subjects	2.83	4 80
12 control subjects	2.90	5 20
18 young patients with eczema	1.34	3 20
8 adult patients with eczema	1.60	4 20

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12. Bennett, T. I; Hunter, D, and Vaughan, J. M: Idiopathic Steatorrhea (Gee's Disease) A Nutritional Disturbance Associated with Tetany, Osteomalacia and Anemia, Quart J Med **1:** 603, 1932.

13 Konstam, G, and Gordon, H. Idiopathic Steatorrhea with Skin Lesions and Megalocytic Anemia, Proc Roy Soc Med **29:** 629, 1936

14 Riley, I. D Metabolic Eczema in Idiopathic Steatorrhea, Lancet **1:** 262, 1939

15 Luzzatti, L, and Hansen, A E: Study of the Serum Lipids in the Celiac Syndrome, J Pediat **24:** 417, 1944

15 a The expression "eczema" is used advisedly, and this phase of the subject is discussed in greater detail in a paper to appear in the American *Journal of Diseases of Children*

16 Hansen, A E. Serum Lipid Changes and Therapeutic Effects of Various Oils in Infantile Eczema, Proc Soc Exper. Biol & Med **31:** 160, 1933. Serum Lipids in Eczema and in Other Pathologic Conditions, Am J. Dis Child. **53:** 933 (April) 1937, Evaluation of the Nutritional Status of Children, with a Note on the Unsaturated Fatty Acids in Nutrition, J. Omaha Mid West Clin Soc **4:** 48, 1943.

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20 Ginsberg, J. E; Bernstein, Clarence, Jr., and Iob, L Vivian· Effect of Oils Containing Unsaturated Fatty Acids on Patients with Dermatitis, Arch. Dermat & Syph **36:** 1033 (Nov) 1937.

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a deficiency of these fatty acids is not definitely established, but the evidence seems to indicate that there may be either a very low intake or an abnormally high requirement of these patients for unsaturated fatty acids which are not synthesized by the body. Epstein and Glick[23] and also Taub and Zakon[24] found no beneficial effects which could be attributed to the ingestion of linseed oil.

It has been observed by a number of clinicians that infantile eczema is less prevalent in breast fed infants than in partially breast fed or artificially fed infants. Grulee and Sanford[25] in a five year study of 20,061 babies found eczema to occur seven times more frequently in artificially fed than in breast fed infants. Robinson[26] also noted skin rashes to be less common in breast fed infants than in infants receiving various formulas containing evaporated milk. In this connection it is interesting to note that Hilditch and Meara[27] in 1944 reported higher percentages of linoleic and unsaturated C_{20-22} acids in human milk fat than in cow's milk fat. Preliminary studies undertaken in 1935 by W. R. Brown and the authors to determine the arachidonic and linoleic acid content of breast milk of mothers nursing eczematous infants showed that the values for these fatty acids tended to be somewhat lower than those for the breast milk of mothers nursing infants with no skin eruption.

COMMENT

In regard to clinical observations made thus far with human subjects, there is no evidence to indicate that a lack of the essential fatty acids produces a disturbance in growth, hematuria, kidney lesions, impaired reproduction, lactation or sterility, which abnormalities are attributed to the dietary lack of either linoleic or arachidonic acid in small experimental animals. However, as one of the most characteristic findings in all animal studies is an alteration in the appearance and character of the skin, it is perhaps not surprising to find a possible relationship between dietary fat and the skin in some human subjects.

The evidence from studies with human subjects on low fat diets for periods up to two years is not very striking in regard to the possible development of an abnormality of the skin. However, the child with chylous ascites who was maintained for the longest time on a low fat diet did develop some eczematous-like lesions and did have more difficulty than expected with both impetigo and prickly heat. This would be in line with observations of Hansen and Wiese[28] with dogs wherein it was found that the skin of animals on a fat free diet appeared to be less resistant to impetiginous infections than animals receiving fresh lard in the diet. That the unsaturated fatty acids may be concerned with the natural integrity of the skin in the healthy state is suggested further by the observation of patients with chronic eczema. The true therapeutic significance, limitations and indications for the addition of substances such as fresh lard or vegetable oils to the diet of these subjects has not been completely evaluated. However, the overall experience of Hansen with approximately 120 patients, all of whom were suffering from an intractable form of eczema and all of whom received supplements of a fat or oil rich in the essential fatty acids, indicates that this type of therapy may be a useful adjunct in this condition. Of the patients who have been studied long enough to interpret the results, in about one half the improvement in the condition of the skin has been excellent, in one fourth the improvement has been definite and in the remaining fourth there has been little or no change observed. No relationship between unsaturated fatty acids and allergy has been demonstrated.

Although the specific function of the essential fatty acids in maintaining a healthy skin, if such a function exists, is not known, their importance in this respect is further evidenced by the work of Hansen, Wiese, Kooda and Fredericks[29] with dogs. These authors found that the skin of young dogs receiving fresh lard in the diet was definitely more resistant to the effect of the local application of croton oil in acetone than the skin of animals which received the same diet except for the isocaloric substitution of sucrose for the lard.

The nature of the histopathologic changes which have been shown to result from the lack of unsaturated fatty acids in the diet of animals is such that it is very unlikely that these will prove to be of any value in the recognition of a fatty acid deficiency in human subjects. The metabolic response as evidenced by the respiratory quotient in an adult subject on the fat free diet was similar to that observed in rats on a fat free diet. Nothing is known regarding interrelationships between the unsaturated fatty acids and the various vitamins in human subjects, although an extensive literature is accumulating from animal experiments. For example, the specific good effect of linoleic acid on the skin is particularly striking in the complete prevention of the severe acrodynia accompanying pyridoxine deficiency in rats.[30]

Perhaps one of the greatest difficulties in ascertaining the essential nature of certain unsaturated fatty acids in human subjects may be attributed to the inability to measure accurately the content and distribution of linoleic and arachidonic acid in the blood and tissues. It is very striking, however, that changes in the pattern of the serum lipids are the same in human subjects as in experimental animals. Although by the bromination technic the tetrabromides and polybromides of serum were demonstrated to be reduced on a fat free diet, this cannot be taken as absolute evidence that the human subject has a special need for linoleic or arachidonic acid. This finding, however, together with various serum lipid studies, gives strong support to the theory that the human organism is unable to synthesize the unsaturated fatty acids which have been found to be essential for some animals. The adaptation of spectroscopic methods to the quantitative measurement of linoleic and arachidonic acids in human serum and tissue promises to aid further studies of the need for and the specific function of the essential fatty acids in human nutrition.

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SATURDAY, DECEMBER 7, 1946

ANTIBIOTICS AND THE CENTRAL NERVOUS SYSTEM

Rammelkamp and Keefer[1] demonstrated that penicillin does not pass through the blood-brain barrier in significant quantities following an intravenous injection of the substance. In normal subjects penicillin appeared to be slowly absorbed and slowly excreted in the urine following intrathecal injection of 5,000 or 10,000 Florey units. In subjects with meningitis, absorption of penicillin after intrathecal injection is more rapid than in normal persons. Injection of 10,000 Florey units in a normal volunteer was followed by headache, vomiting, increased intrathecal pressure and phagocytosis in the spinal fluid. After the injection of 5,000 Florey units, symptoms were not noted other than a slight headache and a slight increase in the number of leukocytes in the spinal fluid. In subjects with meningitis untoward symptoms were not noted following the injection of 10,000 Florey units. Sweet and his co-workers[2] recorded 2 instances of mild and 2 of severe sacral radiculitis following intrathecal injections of penicillin in 16 patients with pneumococcic meningitis. All these patients recovered. McCune and Evans[3] resorted to intraventricular injection of penicillin in a case of staphylococcic meningitis which did not respond to intravenous injections of sodium sulfadiazine and to repeated intrathecal injections of penicillin. A needle passed into the right ventricle of the brain yielded 8 cc. of slightly turbid, colorless fluid which showed only minimal bacteriostatic activity in spite of the fact that 7,500 units of penicillin had been introduced by lumbar puncture two hours earlier. Then 7,500 Florey units of penicillin was dissolved in 5 cc. of saline solution and introduced into the ventricle. There was no immediate reaction to the procedure. There was a definite improvement in the general condition of the patient, leading to complete recovery. These authors suggest that intraventricular use of penicillin may be resorted to as an adjunct to the intrathecal route of administration without untoward reactions and with good effect. A patient with Staphylococcus albus infection of the ventricular system was treated by Johnson and Walker[4] with 50,000 Oxford units by intraventricular injection. Within one hour the patient was comatose and in vascular collapse. For the next several hours he had clonic spasms of the arms, legs and neck. Within a day the patient appeared normal. Two days later 15,000 Oxford units of penicillin was injected into the right lateral ventricle. Four hours later the patient had twitchings of the right arm and leg which disappeared within a few hours. After further intraventricular injections of penicillin without reaction, the patient recovered completely.

Johnson and his co-workers[5] found that in the dog and the monkey approximately 500 Oxford units of penicillin applied to the cerebral cortex is sufficient to induce convulsive manifestations, which initially consist in chronic spasms of the contralateral extremities but later involve all the limbs in the manner of a generalized epileptic seizure. In man the convulsive threshold appears to be considerably higher. These toxic manifestations are not due to impurities in the penicillin, for pure crystalline penicillin induces the attacks. It appears from these experiments that penicillin when applied to the central nervous system in adequate amounts which, the authors stress, fortunately are far above therapeutic requirements, will induce convulsive manifestations which usually are of a temporary nature. These clinical fits are accompanied with the electroencephalographic manifestations which characterize epileptic attacks. Investigation of other antibiotics revealed that streptomycin applied to the central nervous system will induce mild convulsive manifestations of a temporary nature. The clinical and electroencephalographic manifestations are less severe than those produced by equivalent doses of penicillin. Streptothricin, actinomycin and clavacin, when directly applied to the central nervous system in large doses, likewise show convulsive propensities. Penicillin and streptomycin may be applied to the central nervous system without toxic effects in doses far above an adequate antibiotic concentration, whereas streptothricin, actinomycin and clavacin appear to produce severe toxic effects in concentrations little, if at all, above therapeutic levels. These antibiotic substances would not be acceptable for clinical use in the central nervous system even if they were free from systemic toxic effects. As far as penicillin and streptomycin are concerned, the margin between the therapeutic concentration and the convulsive threshold is so great that with reasonable care the toxic effects should be avoidable.

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CARDIAC DEPLETION ALLERGY

Study of the effects of bacterial toxins on the isolated vertebrate heart has led to the discovery of two types of cardiotoxins. The first type is illustrated by the action of Clostridium septicum toxin. Perfused through the isolated frog heart, this bacterial filtrate causes a progressive systolic and diastolic decrease. At the end of twenty minutes the ventricle usually stops beating midway between systole and diastole. A second type of cardiotoxin was recently described by Bernheimer and Cantoni [1] of the Departments of Bacteriology and Pharmacology, New York University College of Medicine. This type is illustrated by cardiotoxic filtrates from Streptococcus pyogenes and the type II pneumococcus.

In a typical experiment a dialyzed streptococcus filtrate was diluted twenty-five times with isotonic solution of three chlorides containing cysteine in a concentration of 1:1,000. The solution was administered by means of a Fühner cannula to an isolated frog heart and allowed to remain in the heart for twenty-three minutes. Even a suggestion of a toxic reaction was not recorded in the course of several hundred experiments. At the end of twenty-three minutes the solution was removed and the heart twice washed with the isotonic solution. A second dose of a toxic filtrate identical with the first was now introduced into the Fühner cannula. Within thirty seconds decreased relaxation of the ventricle occurred, increasing to a complete systolic contracture by the end of ninety seconds.

This toxicity cannot be explained as a result of summation of the two toxic doses. Control normal hearts tested with ten times the sum of the two doses did not show any suggestion of a systolic contracture. The phenomenon is apparently a true sensitization of the myocardium due to the initial contact with the dilute toxin. Similar sensitizations were demonstrated with type II pneumococcus filtrate and with preparations of Clostridium welchi theta toxin.

Analysis of this allergic phenomenon [2] shows that the myocardium, as a result of the initial contact with streptococcus filtrate, releases an inhibitory substance into the perfusion fluid in sufficient quantities to neutralize from five to ten times the routine toxic dose. Subsequent washings with isotonic solution of three chlorides remove nearly all of this toxin inhibitor. The depleted heart thus becomes hypersensitive to a second application of the same cardiotoxin.

Release of this toxin inhibitor was confirmed on mice. Intravenous injection of 0.5 cc. of a 1:25 dilution of streptococcus filtrate kills 16-20 Gm. mice within five minutes. Addition of from 0.125 to 0.5 cc. of inhibitor fluid from a perfused frog's heart usually prevents this toxic reaction completely, two third of all animals surviving indefinitely.

The toxin inhibitor is nondialyzable through a cellophane sac and is relatively heat stable, its inhibiting titer being only slightly reduced by heating to 100 C. for thirty minutes. The inhibitor is soluble in chloroform. By means of chloroform it can be extracted and recovered almost quantitatively from transfusion fluid. The stability of the inhibitor toward heat and its solubility in chloroform clearly set it apart from antibodies in the usual sense of the term.

From the point of view of immunologic theorists the local formation or release of inhibitor substances from the heart muscle is a most important addition to current theories of immunochemistry. Whether or not tissues other than the myocardium synthesize or release similar toxin inhibitors has not yet been determined.

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"WETZEL'S GRIDS" IN PEDIATRIC ENGINEERING

Disease and its treatment, as Blackfan [1] pointed out, "are overshadowed by the problems of growth and development which . . . provide added duties for every physician who undertakes to furnish medical care for children—duties which in olden times were not required." None knew better than he the difficulties of these problems and the limitations of methods then available to deal with them. Now the Wetzel baby grid [2] as an introduction to pediatric engineering is conceived to be a practical method of surmounting the obstacles that have hindered physicians in judging the outcome of their efforts to promote sound growth.

This baby grid, which Wetzel describes as "a direct reading control chart on the quality of growth and development in individual infants," is an extension of principles and technic whose practical value in older children was recognized and commented on by THE JOURNAL [3] some years ago. More recently, in a significant critique contrasting the appraisal of human growth with the less complicated problem in cattle, Samuel Brody, student and investigator of bioenergetics and growth, remarked that "Wetzel gave the best expression to the weight-height-age status." The grid, according to Brody,[4] represents a "unique contribution . . . [which] brings together the weight, height, age and also metabolism data in one conveniently designed chart." There would seem to be good reason for physicians practicing pediatrics to look on the baby grid as Brody does on its forerunner.

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[2] Wetzel, N. C.: The Baby Grid, J. Pediat. **29**:439 (Oct.) 1946.

[3] Physical Fitness from Two to Twenty, editorial, *J. A. M. A.* **116**:1223 (March 22) 1941.

The practical philosophy behind a baby grid is both interesting and instructive. Wetzel takes the point of view of an engineer confronted with the economic problem of controlling the quality of a factory's product where failure to do so would result in "going out of business."[5] He views the infant as the analogue of the factory, the infant's growth as the analogue of factory output. The aim in each case is to maintain "top quality" production and to know whether this is being done. In an infant, even in small premature babies, growth quality is directly gaged by the "fidelity" with which a baby conforms to the "tolerance limits" for speed and direction as patterned in the grid. Healthy infants exemplify, as Wetzel believes, a fundamental law that "growth is a moving and not a static function in babies." Those whose growth is faulty—the engineer's "rejects"—are identified by their departure from that law. As a further tie-in with the engineering approach, such matters as body surface, size and shape as well as energy requirements are also provided for in this one page compendium of infant growth. The physician can evaluate his data on a baby grid without indulging in the statistical pyrotechnics of other methods that are so oblivious to practical considerations as to require that a doctor manipulate sigmas, t-scores or similar paraphernalia of investigative research.

By coincidence the baby grid appears as the American Academy of Pediatrics is in the midst of its earnest, forward looking study of child health services.[6] While these efforts are more immediately concerned with gathering factual data for scientific planning of postwar infant and child care, the ultimate results will sooner or later affect millions of children whose natural right is the opportunity to achieve "top quality growth." But that result, as Wetzel shows, "presumes knowledge on how well a given baby is fulfilling its own capacity for growth." The engineering equipment required for this particular job seems now to be at hand in the form of the baby grid. Pediatricians will utilize this simple precision instrument as an aid in their work with babies, just as the American Association of Teachers Colleges has found the "big grid" useful in their own new curricular emphasis on the growth of school children.[7]

Current Comment

ENVIRONMENT AND PHYSIQUE

The relation between environment in the broad sense and the physical development of human beings has been the subject of many scientific studies and much speculation. Recently Lasker[1] made physical measurements on 284 adult Chinese, 97 of whom were Cantonese immigrants, 48 American born Chinese of Cantonese extraction, 5 Hawaiian born Chinese, 9 Cantonese born elsewhere and the remainder from other parts of China. The standard methods of examination described by Martin[2] were followed, with a few exceptions. Certain differences in physique of Chinese men born and raised in the United States were found as compared with Chinese immigrants born in China. These differences included an increase in the stature and in all the measurements correlated with stature, such as trunk and limbs, other than chest depth. The thoracic, brachial, hand and foot indexes tended to be lower in the Chinese of American birth. The American born Chinese had wider and shorter heads and longer, narrower, higher noses and longer faces. Lasker concluded that the typical oriental youth brought up or born in the United States or Hawaii differed from immigrants of like stock in what he calls an "environmental growth factor." The former is taller with longer arms and legs, relatively smaller hands and feet and flatter chest. His head is likely to be shorter but broader and the nose relatively narrower. More body hair is in evidence. The changes noted in the Chinese born in the United States seem to reflect a process caused by changed diet or other factors incident to the migration of peoples. Whether such physical changes as exist are due primarily to diet, to climate or to other environmental factors would be interesting to investigate though extremely difficult to determine.

THE EYE BANK

The Eye Bank for Sight Restoration, Inc., established in 1944 in New York City, was conceived as a centralized agency where eyes could be systematically salvaged, preserved and redistributed to doctors who perform the corneal grafting operation. Originally twenty leading ophthalmologists in key cities throughout the country acted as advisers and interpreters of the program. At present over two hundred and thirty-seven doctors are serving throughout the nation. To the initial twenty-two prominent New York hospitals that participated in the project at its inception there have been added fifty-six hospitals throughout the country. Transportation for incoming and outgoing eye material has been made available through the cooperation of the American Red Cross and various airlines. In addition to supplying corneas for surgical procedures, the eye bank has carried on a widespread program of education both of the public and of physicians through the press, magazines, the radio and the distribution of literature. During the first year of activity nine

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[4] Brody, Samuel: Bioenergetics and Growth, New York, Reinhold Publishing Corporation, 1945, pp. 638 and 639.

[5] Wetzel, N. C.: Mass, Volume, Surface and Energy Relationships in Human Growth and their Application to the Problem of Growth Failure in Children, Cleveland Engineering **39**:5 (March 7) 1946.

[6] The American Academy of Pediatrics Study of Child Health Services, editorial, J. A. M. A. **131**:32 (May 4) 1946.

[7] Child Growth and Development Emphases in Teacher Education, Prepared by the 1943-1944 Teachers College Collaborators, Lonzo Jones, Chairman, American Association of Teachers Colleges, p. 23.

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[1] Lasker, Gabriel Ward: Migration and Physical Differentiation, Am. J. Phys. Anthrop. **4**:273 (Sept.) 1946.

[2] Martin, Rudolf: Lehrbuch der Anthropologie, ed. 2, Jena 1928.

scholarships were awarded to ophthalmologists, who, after their training, will return to states throughout the country to be associated with medical centers. In addition, two fellowships have been granted. The facilities of the Ayer Laboratory for Corneal Research have been made available for routine and investigative work. Here the eyes are received, given a prompt and careful examination to determine the condition of the corneal tissue, put under a twenty-four hour culture test and then sent with directions to doctors for grafting operations. After the corneal tissue has been used the eyes receive a pathologic examination, and the results of this are reported to the hospital or doctor whence the eyes originated. Challenging research problems which have been attacked include studies on corneal preservation, technics of transplanting the vitreous humor and investigations of the metabolic and histologic properties of the eye. An information kit of educational material may be obtained by writing to the Eye Bank for Sight Restoration, Inc., 210 East 64th Street, New York 21.

VACCINATION FOR MUMPS

Active attempts are now being made to develop a satisfactory vaccine against mumps. Recently Stokes and his colleagues[1] reported on the use of formol-inactivated suspension of mumps virus as a vaccine against mumps. Four groups of children were studied who were inmates of three institutions. A negative complement fixation test was the only criterion of susceptibility in the selection of the first two groups. In the third group this test was used and also, as a further check on susceptibility, skin tests. The fourth group consisted of those who at the beginning of the experiment were found to be negative both by complement fixation and by skin test. In the first, second and fourth groups approximately half of the children were given suspension of mumps virus inactivated by the addition of formol. The remaining children were controls. In the third group about two thirds of the children were vaccinated. The vaccine was administered in the first, second and fourth groups by a subcutaneous route in two doses each of 0.3 cc. of a 10 per cent and of 0.5 cc. of the 2.5 per cent suspension at an interval of five days. The period for testing the vaccinated group was fourteen to seventeen days from the date of first injection of the vaccine. The virus employed in testing the efficacy of vaccination was introduced by injection directly into Stensen's duct or by spray. A variable degree of swelling of the inoculated parotid gland appeared after the injection of virus in all of those who received the virus by direct inoculation. However, the interval between the inoculation with live virus and the time at which the maximal enlargement of the gland was noted varied considerably in the vaccinated and the control groups. About four fifths of the vaccinated may be considered to have exhibited evidence of resistance as compared with about one fourth of the controls. The principal conclusion from the study was that vaccination with formol inactivated virus apparently leads to increased resistance in about half of the children whose immunologic status was subsequently tested by experimental inoculation of pathogenic material. The degree of protection in human beings afforded by the formolized vaccine is therefore of about the same degree as that observed in monkeys vaccinated in the same manner.

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[1] Stokes, Joseph, Jr., and others: Immunity in Mumps: VI. Experiments in the Vaccination of Human Beings with Formolized Mumps Virus, J. Exper. Med. **84**: 407 (Nov.) 1946.

PHYSIOLOGIC STANDARDS IN ADOLESCENCE

Pediatrics has been well established for many years; geriatrics is making a bid for recognition; specialty practice outside the pediatric and geriatric age groups is concerned with adult patients. There remains, however, a special age group which has peculiar physiologic, pathologic and psychologic problems. Significant studies are now appearing regarding these important medical factors in adolescence.[1] Among these the surveys made by Nathan W. Shock[2] are particularly important. These studies were initiated by the Institute of Child Welfare at the University of California and have been continued under the direction of the National Institute of Health. Shock emphasizes the difficulty of establishing adequate standards for physiologic factors in adolescence. Shuttleworth[3] in 1938 demonstrated the serious limitations of average values usually regarded as "age norms" obtained from averages of different children measured at successive ages. Repeated measurements on the same children during growth have shown the individuality of the growth process. Shock emphasizes that the rapidly maturing adolescent may find himself in difficulties because adults expect from him behavior or performance consistent with his size. Since size and social or intellectual maturity do not necessarily proceed together, it often happens that the "large" adolescent is relatively immature. Thus he may be unable to meet the expectations of adults with respect to performance or behavior. The failure to "deliver" in the eyes of his peers or of adults is not an uncommon source of psychologic tensions. Probably inadequacy felt or observed by many adolescents has a definite physical or physiologic basis, but the nature of the factors concerned may vary widely among different boys and girls. Knowledge of individual differences in rates of maturing, as illustrated by the observations reported by Shock, can do much to minimize the emphasis placed all too often by school physicians and councilors on attaining "normal" values. The pediatrician is in a strategic position to aid developing adolescents in understanding and evaluating their own development.

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[1] Jones, H. E.: Development in Adolescence, New York, D. Appleton-Century Company, 1943. Stolz, H. R., and Stolz, L. M.: Adolescent Problems Related to Somatic Variations, Nat. Soc. Study Educ., 43d Yearbook, part I, 1944, p. 80.

[2] Shock, N. W.: Age Changes and Sex Differences in Alveolar CO_2 Tension, Am. J. Physiol. **133**: 610 (July) 1941; Standard Values for Basal Oxygen Consumption in Adolescents, Am. J. Dis. Child. **64**: 19 (July) 1942; The Effect of Menarche on Basal Physiological Functions in Girls, Am. J. Physiol. **139**: 288 (June) 1943; Physiological Changes in Adolescents, Nat. Soc. Study Educ., 43d Yearbook, part I, 1944, p. 56; Basal Blood Pressure and Pulse Rate in Adolescents, Am. J. Dis. Child. **68**: 16 (July) 1944. Shock, N. W., and Soley, M. H.: Average Values for Basal Respiratory Functions in Adolescents and Adults, J. Nutrition **18**: 143 (Aug.) 1939. Shock, N. W.: Some Physiological Aspects of Adolescence, Texas Rep. Biol. & Med. **4**: 289-309, 1946.

[3] Shuttleworth, F. K.: Sexual Maturation and the Skeletal Growth of Girls Age Six to Nineteen, Monogr. Soc. Res. Child Develop. **3**: 1, 1938.

ORGANIZATION SECTION

Official Notes

RESOLUTIONS TO BE PRESENTED TO HOUSE OF DELEGATES

The following resolution will be presented to the House of Delegates at the Supplemental Session, December 9 to 11, by the Indiana delegation:

Resolution on National Conference of County Medical Society Officers

WHEREAS, Public relations, as pertains to organized medicine, has a most important field of effort in reaching and giving information to and receiving suggestions from the rank and file of doctors who give medical service to the public the country over, and

WHEREAS, Efforts in this direction have been so successfully carried on by the secretaries' conferences sponsored by several of the state medical societies, and

WHEREAS, There is no national group at present functioning in this capacity, therefore be it

Resolved, That the American Medical Association sponsor a national conference of officers of county medical societies which shall meet yearly just preceding the annual session of the House of Delegates of the American Medical Association for the purpose of bringing to the annual session the diverse problems of the various localities, the exchange of ideas which would be helpful to the state conferences, in such matters as voluntary health insurance plans, hospitalization plans, construction of new hospitals in needed places, and improvement in medical facilities, rural health activities, nursing activities and the activities of the various Councils of the American Medical Association

Dr. E Vincent Askey, delegate of the California Medical Association, will present the following resolution

Resolution on Requirements for Approval of Hospitals

WHEREAS, The problem of hospitalization is urgent now and will be distressingly difficult for an indefinite period of time, and

WHEREAS, There is apparently a definite plan to limit staff membership in hospitals to diplomates of the various specialty boards, and

WHEREAS, The limiting of staff memberships and heads of departments of such staffs in hospitals to such diplomates could tend to injure the best interests of the public and the medical profession as a whole, and

WHEREAS, Of a total of 180,000 physicians in the United States approximately only 22,000 are diplomates of all specialty boards, and limitation by the hospitals of their facilities to use by these few would work an injustice on other capable doctors and their patients, therefore be it

Resolved, That the House of Delegates of the American Medical Association suggests to the Council on Medical Education and Hospitals and directs it to further the realization of this suggestion, to wit

The requirements for approval of hospitals shall be so defined that there shall be (1) adequate protection of the rights of all doctors and their patients in obtaining hospitalization to the end that general practitioners as well as specialists shall have access to and use of hospital facilities, (2) that the criterion of whether a doctor may be a member of a staff or head of a department shall be his actual ability as a doctor and not dependent on special society or board membership, and (3) that the American College of Surgeons be urged to conform to these general policies in its procedures in the standardization of hospitals

Coming Medical Meetings

American Medical Association House of Delegates Supplemental Session, Chicago, Dec 9-11. Dr. George F. Lull, 535 N Dearborn St, Chicago 10, Secretary.

Conference of State Secretaries and Editors, Chicago, Dec 7-8. Dr. George F. Lull, 535 N. Dearborn St, Chicago 10, Secretary.

American Academy of Dermatology and Syphilology, Cleveland, Dec 7-12. Dr. Earl D Osborne, 471 Delaware Ave, Buffalo, N Y., Secretary.

American College of Surgeons, Cleveland, Dec. 16-20 Dr. Dallas B. Phemister, 40 E Erie St, Chicago 11, Secretary.

American Society of Anesthesiologists, New York, Dec 12 Dr. Curtiss B. Hickcox, 745 Fifth Ave, Room 1503, New York, Secretary.

Puerto Rico, Medical Association of, Santurce, Dec. 13-15 Dr Rafael A. Vilar, P. O Box 3866, Santurce, Secretary.

Southeastern Allergy Association, Atlanta, Ga, Jan. 18-19 Dr. Katharine B MacInnis, 1515 Bull St, Columbia 49, S C, Secretary.

Southern Surgical Association, Hot Springs, Va, Dec. 10-12. Dr. Alfred Blalock, Johns *Hopkins Hospital,* Baltimore 5, Secretary.

Washington Letter

(From a Special Correspondent)

Dec. 2, 1946.

Insulin Increased 50 Per Cent in Price Without Price Control

Increases of 50 per cent in the price of insulin are reported by producers, following the removal of price controls here. Eli Lilly and Company of Indianapolis has announced an increase of this amount and the other manufacturers are reported to be following suit The drug is a necessity to around a million diabetic sufferers in this country. Industry spokesmen say that the rise in price is necessary because of the increased demand for beef and pork pancreas glands, the raw material for insulin, and because of new uses for insulin as well. The glands also have new uses in protein extracts for supplemental diseases Insulin was for long under close price control

Medical Center May Be Patterned After Massachusetts General Hospital

The $20 million hospital center to be erected in the nation's capital may be patterned after the Massachusetts General Hospital in Boston, which has separate medical and surgery buildings, is erecting a building for women's diseases, has two private patient buildings on luxury and middle income levels, and operates separate institutions for mental patients and tumor research and treatment The three Washington hospitals involved in the Washington center may have functions allocated as follows· Emergency, devoted to surgery, Garfield, devoted to medicine, and Episcopal Eye, Ear and Throat continuing present specialized services Emergency and Garfield hospitals must continue as separate entities to keep endowments and present operating funds.

Cancer Society Incorporates District of Columbia Division

Dr. H. H. Kerr, president of the newly incorporated District of Columbia Division of the American Cancer Society, said that the group plans a "really effective cancer control program" Washington's first organized program against cancer will be preceded by a survey of cancer needs to be paid for by the U. S Public Health Service The survey director will be chosen by District Health Officer Ruhland from a list of experts compiled by Dr Calvin T. Klopp, director of the Warwick Memorial Cancer Clinic in Garfield Hospital

Psychiatric Foundation Organized

Following the example of tuberculosis, cancer and infantile paralysis movements, the Psychiatric Foundation, a nonprofit corporation, has been formed to fight mental illness The foundation is composed of laymen and specialists The group has the endorsement of the American Psychiatric Association, the American Neurological Society and the National Organization of Public Health Nursing

Walter Reed Hospital Faces Cuts in Funds and Personnel

The economy program of the Army is expected to cause further cuts in budget and personnel of Walter Reed Hospital, although both categories have already been reduced by about 25 per cent, it is reported There is not expected to be a reduction in the patient load at the hospital because temporary hospitals throughout the country are being closed and some of their patients are coming to Walter Reed

Predicted Influenza Epidemic Is Slow in Arriving

The U S Public Health Service has indicated that a predicted influenza epidemic is slow in materializing. There were 2,104 cases throughout the nation for the week ended November 16, which is about half the number of cases reported for the same week last year. Of the recent total Texas reported 1,039, Virginia 317, North Carolina 309 and Arizona 130.

GOVERNMENT SERVICES

ARMY

29TH GENERAL HOSPITAL (THE COLORADO UNIT) SCHEDULED FOR INACTIVATION

The 29th General Hospital, chief army medical installation in southern Korea, will be inactivated before December 15. Activated as a 1,000 bed general hospital on Sept. 1, 1942 at Fort George Meade, Maryland, this hospital drew its professional personnel from the University of Colorado School of Medicine, Denver. The unit arrived at New Caledonia on Nov. 21, 1943, and more than 12,000 casualties from Bougainville, Munda, Saipan, Leyte, Peleliu and other South Pacific campaigns were treated at this hospital. In April 1945 the unit was ordered to Okinawa and in October of that year to Seoul, Korea. The hospital has given general hospital type care to members of the occupation in Korea since then.

The commanding officer of the 29th General Hospital while in the South Pacific was Col. William C. Pollack. Lieut. Col. John M. Foster was in command from July 5, 1944 to November 1945 and Col. Jonathan M. Rigdon from December 1945 to July 1946. From August to September 1946 Major Harold V. Ellingson, Cleveland, who is still with the hospital, was in command. The present commanding officer is Lieut. Col. William B. Stryker of St. Paul.

The hospital was awarded the Army Meritorious Service Unit Plaque July 30 of this year for superior performance of duty in the execution of exceptionally difficult tasks in New Caledonia from January to April 17, 1945.

MEETING AT 42D GENERAL HOSPITAL IN JAPAN

About 150 army doctors of the Tokyo-Yokohama area held the regular bimonthly meeting November 13 at the 42d General Hospital. Addresses were given by Col. C. L. Gandy, Ocean View, N. J., commanding officer, 42d General Hospital; Col. P. L. Cook, Wyalusing, Pa., surgeon, Eighth Army; Brig. Gen. J. A. Bethea, U. S. Army, Marion, S. C., chief surgeon, A. F. P. A. C.; Capt. M. H. Paushter, Springfield, Mass., on Methyl Alcohol Poisoning; Capt. M. C. Blanchard, Columbus, Ga., Infectious Mononucleosis; 1st Lieut. Edmunds G. Dimond, Indianapolis, Mediastinal Emphysema; 1st Lieut. Alan Davidson, St. Albans, Vt., Management of Foreign Bodies in the Eye; Capt. G. O. Wellman, Hurricane, W. Va., Gunshot Wounds of the Abdomen and Rupture of the Liver; 1st Lieut. Walter J. Wilkins, Poplar Bluff, Ark., Rupture of the Duodenum; Capt. Donald E. Preshaw, Detroit, Atelectasis with Pleural Effusion; Capt. Chester B. Powell, Chicago, Management of Head Injuries; Capt. Thomas H. Williams Jr., Montgomery, Ala., Management of Injuries to the Genitourinary Tract, and 1st Lieut. H. I. Posin, New York, of the 361st Station Hospital, Epilepsy.

PROFESSIONAL ACTIVITIES AT HALLORAN GENERAL HOSPITAL

A special week of professional activities began at U. S. Halloran General Hospital, Staten Island, New York, on November 18. Following a series of rounds in the Dermatology and Medical buildings and clinics in orthopedic and neurosurgery, a conference was addressed by Dr. Harry Gold, associate professor of pharmacology, Cornell University Medical College, on treatment of cardiac failure. At a conference on the following day, with clinics and rounds, Dr. Hirsh Liebowitz, instructor of medicine, New York University College of Medicine, discussed the treatment of peptic ulcer. A film on bronchial asthma was presented and a symposium on preoperative orthopedics. Other activities during the week comprised a cardiac fluoroscopy clinic, rounds in general surgery and postoperative neurosurgery and orthopedic postoperative evaluation, all under the general supervision of Col. O. H. Stanley, M. C., U. S. Army, commanding officer of the hospital.

GENERAL KIRK AWARDED CROSS OF LEGION OF HONOR

Major Gen. Norman T. Kirk, the Surgeon General of the United States Army, was recently awarded the Cross of the Legion of Honor in the degree of Commander at the office of the French military attaché, Washington, D. C. In the same ceremony the degree of Chevalier was awarded to Brig. Gen. Raymond W. Bliss, Deputy Surgeon General of the United States Army. The presentations were made by the Surgeon General of the French army, Gen. Raymond Debenedetti, who was accompanied by Col. Alexander Ribollet and Major Pascaul Santini, French staff officers.

ARMY AWARDS AND COMMENDATIONS

Brigadier General Robert M. Hardaway

The Legion of Merit was recently awarded to Brig. Gen. Robert M. Hardaway, M. C., U. S. Army, of Washington, D. C., "for exceptionally meritorious service as commanding general, Bushnell General Hospital, from August 1942 to January 1946. General Hardaway's sound foresight and effective planning" was credited in the citation as resulting "in the highest type medical and surgical treatment for all patients. He developed a superior program for amputee patients throughout the Ninth Service Command. Through extensive professional knowledge, initiative and unremitting devotion to duty, he provided these patients with a highly efficient method for training in the use of artificial limbs." Dr. Hardaway graduated from Washington University School of Medicine, St. Louis, and entered the service May 25, 1912.

Colonel Charles T. Young

The Oak Leaf Cluster to the Legion of Merit was recently awarded to Col. Charles T. Young, M. C., U. S. Army, of Washington, D. C., for meritorious service from March to October 1945 as commanding officer, Wakeman Convalescent Hospital, where "he displayed a high type of organizational ability and leadership." The citation also states that "by reason of his judgment, energy and superior force and leadership Colonel Young was responsible for the outstanding qualities of Wakeman Convalescent Hospital, and contributed materially to the war effort." Dr. Young graduated from John Hopkins University School of Medicine and entered the service Aug. 3, 1928.

Lieutenant Colonel Weldon K. Ruth

The Bronze Star was recently awarded to Lieut. Col. Weldon K. Ruth, M. C., U. S. Army, of O'Keene, Okla., who "performed meritorious and heroic services from April 10 to 22, 1942 during the march of captured Americans from Bataan Province to Japanese concentration camp near Capas, Tarlac, Philippine Islands." Lieutenant Colonel Weldon was cited for disregarding his own condition and risking brutalities and death at the hands of the Japanese by continually attending his sick, exhausted comrades. "He prevented the murder of two officers on separate occasions by interposing his body between them and enemy soldiers until he could revive them enough to continue the march. Major Ruth's ministrations did much to alleviate the suffering of his fellow prisoners of war." Dr. Ruth graduated from the University of Oklahoma School of Medicine, Oklahoma City and entered the service Dec. 7, 1936.

NAVY

ADMIRAL SWANSON TO SUCCEED ADMIRAL McINTIRE AS SURGEON GENERAL

President Truman on November 27 appointed Capt. Clifford A. Swanson Surgeon General of the Navy and chief of the Bureau of Medicine and Surgery, with the rank of Rear Admiral. Admiral Swanson, whose selection is a recess appointment pending confirmation by the Senate, will succeed Vice Admiral Ross T. McIntire, who has held that position since his appointment by President Roosevelt on Dec. 1, 1938. Admiral Swanson is from Marquette, Mich., and graduated from the University of Michigan Medical School, Ann Arbor, in 1925. He is a member of the American Academy of Ophthalmology and Otolaryngology and has been certified by the American Board of Otolaryngology. He entered the medical corps of the Navy in June 1925.

Admiral McIntire, a native of Oregon, graduated in medicine in 1912 from the Medical School of Willamette University, now the University of Oregon School of Medicine. He was the first Surgeon General of the Navy to be born west of the Rocky Mountains. In addition to the duties of Surgeon General and chief of the Bureau of Medicine and Surgery, he served also as White House physician. His present appointment expired November 1. Mr. Truman provided that Admiral McIntire will retain the rank of Vice Admiral when detached from his present duties. Admiral McIntire was also a specialist in ophthalmology and otolaryngology. He is due to retire in a short time, when he will have completed thirty years of active duty in the Navy.

NAVY AWARDS AND COMMENDATIONS

Captain Frederick L. McDaniel

The Commendation Ribbon was recently awarded to Capt. Frederick L. McDaniel (MC), U.S.N., "for conspicuous and outstanding service as senior medical officer of the U. S. S. *Benevolence* when that hospital ship was suddenly and without forewarning called on to screen, treat and otherwise care for the first 1,500 Allied prisoners of war released from Japanese prison camps in the Tokyo Bay area. Subsequently," continues the citation, "under his able professional supervision the many hundreds of seriously ill American prisoners of war were afforded the highest type of medical skill and treated with most meticulous and kindly service. The quality of leadership demonstrated by Captain McDaniel was an inspiration to his staff associates and a reassurance to the suffering prisoners of war. His conduct was at all times in keeping with the highest traditions of the United States Naval Service." Dr. McDaniel graduated from the University of Maryland School of Medicine in 1913 and entered the service in May 1917.

PERSONAL

The Bureau of Medicine and Surgery announced the assignment of Commander James A. Grindell (MC), U.S.N., to the Massachusetts General Hospital, Boston, for a course in cardiology.

PUBLIC HEALTH SERVICE

FELLOWSHIPS IN HEALTH EDUCATION

Fellowships leading to a Master's Degree in Public Health in the field of Health Education are being offered to any qualified United States citizen between the ages of 22 and 40, according to a statement by the U. S. Public Health Service. Tuition, travel expenses for field training and a stipend of $100 a month will be provided out of funds furnished by the National Foundation for Infantile Paralysis. Candidates must hold a bachelor's degree from a recognized school and must be able to meet the entrance requirements of the accredited school of public health of their choice. In addition, courses in the biologic sciences, sociology and education may be required. Training in public speaking, journalism, psychology and work in public health or a related field are considered desirable qualifications.

The year's training, which begins with the 1947 fall term, consists of eight or nine months' academic work including public health administration, epidemiology, public health and school education, problems in health education, community organization and information technics and three months of supervised field experience in community health education activities. Application blanks may be obtained by writing the Surgeon General, United States Public Health Service, Washington 25, D. C., and must be filed prior to March 15, 1947.

Veterans are encouraged to apply and will be paid the difference between their subsistence allowance under the G. I. Bill of Rights and the monthly stipend of $100. Employees of local and state health departments are not eligible, since federal grants-in-aid are already available for such training purposes.

GRANTS FOR CANCER RESEARCH

The U. S. Public Health Service has announced that grants-in-aid amounting to about $200,000 have been recommended by the National Advisory Cancer Council for the support of cancer research projects in twenty-one universities, hospitals and research institutions. The variety of projects covered by the grants illustrate the complexity of the cancer problem and the many angles from which research must be carried on to solve it. The grants were recommended at the thirty-second meeting of the council held November 8 at the National Cancer Institute, Bethesda, Md., and presided over by Dr. James A. Crabtree, Acting Surgeon General, U. S. Public Health Service. The members of the National Advisory Cancer Council are Dr. Thomas Parran, Surgeon General, U. S. Public Health Service, who is chairman ex officio and in whose absence Dr. Crabtree presided; Dr. George M. Smith of Yale University, executive director of the council; Dr. Frank E. Adair, president of the American Cancer Society, New York City; Dr. A. C. Ivy, acting dean, University of Illinois Medical School, Chicago; Dr. Charles B. Huggins, professor of surgery, University of Chicago School of Medicine, Chicago; Dr. Sherwood Moore, director of the Mallinckrodt Institute of Radiology, Washington University, St. Louis, and Dr. Robert S. Stone, professor of radiology, University of California Medical School, San Francisco.

NEW ASSISTANT CHIEF, BUREAU OF STATE SERVICES

Dr. Herman Hilleboe has been appointed to the newly created post of assistant chief, Bureau of State Services, United States Public Health Service. Dr. Hilleboe will continue to discharge his regular duties as chief of the Tuberculosis Control Division. A graduate of the University of Minnesota Medical School and of the School of Public Health at Johns Hopkins University, he has been in public health activities since 1933, when he was appointed director of the Minnesota State Division of Tuberculosis Control. In 1937 he became special consultant in tuberculosis to the National Institute of Health and in 1939 became senior assistant surgeon in the Regular Corps of the Public Health Service. He was appointed by the Secretary of State to attend the fourth World Conference of Workers for Crippled Children in London, England, and, while abroad, inspected tuberculosis control programs in England, Germany, France and the Scandinavian countries. In 1942 Dr. Hilleboe was assigned to duty in the Public Health Service and made medical officer in charge of the Tuberculosis Control Section, States Relations Division. In 1944 he was appointed chief of the newly created Tuberculosis Control Division, with the rank of medical director.

VETERANS ADMINISTRATION

THE HOME TOWN MEDICAL CARE PROGRAM

Dr. Paul R. Hawley, medical director of the Veterans Administration, explained on November 14 the extent of the medical services which may be rendered to veterans under the home town medical care program. Existing legislation provides that veterans may be furnished outpatient medical or dental treatment in VA clinics, in private offices of physicians or dentists, or in their own home *only for disabilities recognized by VA as incurred or aggravated in line of duty in active service.* Only prescriptions for service connected disabilities may be filled at government expense by local pharmacies under VA's home town prescription service. The medical facilities of VA regional and subregional offices, clinics and hospitals under law must be utilized to the fullest extent for examination and outpatient treatment of veterans. When it has to be determined whether a veteran residing in an area where there is a VA field station (such as a clinic or a hospital) is to be referred to a VA clinic or to a civilian physician, the best interest of both the veteran and the government will be considered.

If veterans establish to the satisfaction of the chief medical officer of a VA regional office that reporting to a field station would work unnecessary physical hardship or cause excessive loss of time from employment, fee-basis doctors may be utilized. In any event, final decision rests with chief medical officers of VA regional offices. Then too, when the backlog of physical examinations justifies or when outpatient treatment is not being rendered expeditiously, the chief medical officers of VA regional offices may utilize the services of civilian physicians working under statewide contracts with the Veterans Administration.

Male veterans may be admitted to private hospitals (preferably those under contract by VA) for inpatient treatment of service connected disabilities by civilian physicians under contract to VA only if their condition is such as to constitute an emergency which cannot be met by a VA hospital because of the lack of beds or because the patient's condition prohibits travel. Prior authorization for this hospitalization and treatment in a private hospital must be obtained. If, owing to the extreme emergency of the case, prior authorization is not obtained, the physician or admitting hospital should notify VA within seventy-two hours. If the facts so warrant, VA will issue authority for the veterans's private hospitalization and treatment. Women war veterans may be admitted to private hospitals (preferably those under contract by VA) for inpatient treatment of *both service connected and non-service connected disabilities* by civilian physicians if it is an emergency which cannot be met by VA or because of the unavailability of beds or because the serious condition of the patient precludes travel. Authorization must be obtained exactly as in the case of male veterans.

CONTRACT WITH WEST VIRGINIA MEDICAL ASSOCIATION

Dr. Andrew E. Amick, president of the West Virginia State Medical Association, has appointed a board of review under the provisions of the contract between the association and the Veterans Administration. The board is composed of Drs. Claude B. Smith and Paul H. Revercomb of Charleston and James R. Brown of Huntington. The board will review reports which are deemed by the Veterans Administration to be inadequate or which do not meet the requirements of the Veterans Administration, recommend, at its discretion, the disqualification of any physician from further work with the Veterans Administration whose work is found by the board to be unsatisfactory, and advise and assist the Veterans Administration in other matters within the scope of the program.

With the signing of the contract the work of the Veterans Affairs Committee was completed. This committee, which has functioned since early in the year, was composed of Drs. Claude B. Smith, Charleston, chairman; C. O. Post, Clarksburg; Thomas L. Harris, Parkersburg; Francis A. Scott, Huntington, and Ralph J. Jones, Charleston. As of November 15, 809 members of the West Virginia State Medical Association have been certified as fee designated physicians under the veterans care program.

SPECIAL ORTHOPEDIC SHOES FOR VETERANS

Veterans with service connected disabilities now may obtain special orthopedic shoes free of charge from the Veterans Administration. Machines to make plaster casts of injured or deformed feet have been transferred from the War Department to the Veterans Administration and two are already in operation at the VA hospital, Hines, Ill., and the VA hospital at Atlanta, Ga., formerly the Army's Lawson General Hospital. Machines will be installed later at VA regional offices in Kansas City, Mo., New York and San Francisco. Plaster casts made by these machines will be sent to the army's quartermaster supply depot at Boston, where special lasts and patterns will be developed. The orthopedic shoes then will be constructed by commercial contractors, and completed shoes will be shipped to veterans by the VA regional office or hospital making the purchase.

Qualified veterans and also army personnel will be eligible for the service at establishments where the cast-making machines are in operation. Veterans should make applications through their nearest VA representative.

Cast-making machines are maintained by the Army at the Orthopedic Footwear Clinic, Boston, Walter Reed General Hospital, Brooke Army Medical Center, Fort Sam Houston, Texas, Fitzsimons General Hospital, Denver, and Madigan General Hospital, Fort Lewis, Washington.

PSYCHIATRISTS WANTED

Psychiatrists, clinical psychologists and psychiatric and medicosocial workers are needed by the Veterans Administration to serve in VA mental hygiene clinics now being operated in twenty-three cities. Twenty or more additional clinics in other cities are to be opened when personnel to staff them is available. Minimum qualifications for psychiatrists require certification as specialists by the American Board of Psychiatry and Neurology, or eligibility for the examination.

The grade of a psychiatrist is determined by professional qualifications, and base pay per year ranges from $4,149.60 to $10,000. Certification by the American Board of Psychiatry and Neurology entitles the psychiatrist to an additional 25 per cent of the base salary up to a limit of $11,000.

Positions for clinical psychologists and psychiatric and medicosocial workers are under the rules and regulations of the U. S. Civil Service Commission. The base pay per year ranges from $4,149.60 to $6,862.80. Applicants must have at least two years of progressively responsible experience in the application or teaching of psychologic principles and technics and proved ability to evaluate personality problems. In addition, all candidates must have completed ten required courses in the field of psychology. If an applicant has completed all requirements for a doctor's degree in psychology, he will be accepted as meeting this education requirement.

Social workers (psychiatric and medical) earn from $3,397.20 to $5,905.20 per year. One year of training in an approved school of social work is the minimum educational requirement for these positions. This training must have included supervised field work and courses in psychiatric or medical information plus the required experience, which is one year in a health or welfare agency of acceptable standards. Additional qualifying experience is required for higher grade positions. Applicants may substitute one year of training (in addition to that used to satisfy the basic requirement) completed in an approved school of social work for one year of experience.

Veterans Administration mental hygiene clinics now in operation are located at Boston, Denver, Des Moines, Iowa, St. Louis, Los Angeles, Baltimore, Pittsburgh, Chicago, Newark, N. J., New Orleans, Cleveland, Cincinnati, Detroit, Minneapolis, Portland, Ore., San Francisco, Seattle, Providence, R. I., Milwaukee, Hartford, Conn., Dallas, Texas, Philadelphia and Washington, D. C.

VETERANS' CARE IN CONNECTICUT

Connecticut's "home town" medical care plan for war veterans with service connected illnesses or injuries has been approved by the Veterans Administration. The Connecticut State Medical Society plan is now being put into action through a broad educational program among its more than 2,200 members. Main emphasis of the plan is directed toward the development of medical care for veterans in their own communities "to cultivate wholesome physician-patient relationships" and "100 per cent participation" in the plan by physicians throughout the state.

Four veteran medical officers, all members of the society, comprised the committee which developed the plan. They are Dr. Samuel B. Rentsch, chairman, of Derby, Dr. Egbert M. Andrews of Hartford and Drs. Norton Canfield and Joseph N. D'Esopo of New Haven.

MISCELLANEOUS

BANDAGES AND DRESSING FOR SALE

The War Assets Administration announces that large quantities of all types of surgical bandages and dressings which cost the government more than $1,000,000 will be offered to priority and other eligible buyers from November 20 to December 10. WAA Regional Offices at Denver, Kansas City, Mo., New York City, San Francisco and Seattle are conducting the fixed price sales. Detailed descriptions, prices and minimum purchase requirements may be obtained by writing any of the five regional offices handling the disposal.

More than 250,000 triangular compressed bandages and about 300,000 gauze bandages, some 3 inches and others 4 inches wide and all 6 yards long, are included in these sales. Large quantities of white gauze roller bandages, 4 inches by 10 yards, packed twelve rolls to a box, and of compressed bandage gauze, 3 inches by 6 yards, packed seventy-two to a box, are available at some of the five regional offices.

Orders will be accepted concurrently from all eligible buyers in the following sequence: certified veterans of World War II, Reconstruction Finance Corporation for small business, state and local governments, nonprofit institutions and nonpriority buyers. Orders received after December 10 from both priority and nonpriority buyers will be filled from remaining inventories, WAA said. Federal agencies were previously given an opportunity to fulfil their needs.

VETERANS' BABIES CARED FOR BY THE GOVERNMENT

The Children's Bureau of the Social Security Administration keeps a count of the number of servicemen's babies for whom Uncle Sam pays the stork bill, which now amounts to almost $100,000,000. The Emergency Maternity and Infant Care Program, now in its fourth year of operation, is administered by state health departments under plans approved by the U. S. Children's Bureau.

Wives and infants under 1 year of age of men in the four lowest pay grades of the Army, Navy, Coast Guard and Marine Corps are eligible, and care is given even after the serviceman's discharge, if the pregnancy occurred or the infant was under 1 year of age while the husband was in one of the eligible grades. Another hundred thousand babies are on their way, the Children's Bureau reports, and maternity care is being given to their expectant mothers. Besides, more than 180,000 of the babies already born have received or are receiving additional medical, hospital or nursing care during their first year of life.

This care is now costing Uncle Sam about $100 for a maternity case and about $65 for an infant's case. In a few cases with complications the bill runs over $1,000. The amount paid covers the cost of good maternity care, including antepartum care, delivery and care for six weeks after the baby's birth. Doctor, hospital and nurses' bills are all paid, including those for consultation and laboratory services at rates established under each state plan. Similarly, the medical and hospital bills are paid for the care of a sick baby.

"This wartime emergency measure," Dr. Martha M. Eliot, associate chief of the Children's Bureau, said, "turned out to be the largest single public medical care measure for mothers and infants so far undertaken in this country." Besides public health officials and members of their staffs who administered the state program, in one year 48,000 doctors were involved in providing care to these women and their babies. Hospitals everywhere in the country participated. "Many professional workers, motivated by a sense of public obligation, did the job," Dr. Eliot said. "Thanks are due not only the doctors, nurses and hospital staffs but also the countless individuals who took it on themselves to help out in this emergency."

The whole program, it is said, developed out of one person's efforts. Long before Pearl Harbor an army post commander, seeing the plight of many servicemen's families, sought help from the state health department. As a result a request came to the Children's Bureau asking that part of the federal funds available under the Social Security Act for maternal and child health services be used to get care to these servicemen's wives and babies. The request was granted for that state and before a year in twenty-six other states. To meet the emergency in all states Congress appropriated special funds in March 1943. Certain minimum requirements had to be met by hospitals accepting such cases under the state plans.

CANCER AND THE MEDICAL SCHOOL CURRICULUM

A special committee comprising representatives of fourteen medical schools and of the National Research Council met recently at the National Cancer Institute, Bethesda, Md., with the National Advisory Cancer Council to discuss the place of cancer in the medical school curriculum.

Dr. Frank E. Adair, chairman of the committee, declared that something must be done to improve the education of medical students in cancer, which ranks second as a cause of death in the United States. Among the suggestions made were the establishment of professorships in clinical cancer, greater use of the facilities of cancer diagnosis and cancer prevention clinics, the establishment of cancer institutes or hospitals in connection with medical schools in large urban centers, and greater emphasis in the medical school on the importance of preventive medicine.

A committee to outline a plan of teaching and to make recommendations, which will be sent to all medical schools, will be appointed later.

PERSONAL

The director, Office of Vocational Rehabilitation, Federal Security Agency, has announced the appointment of Dr. Charles L. Newberry as assistant chief medical officer succeeding Dr. Thomas B. McKneely, who was appointed chief medical officer. Dr. Newberry graduated from Marquette Medical School in 1926, engaged in private practice in Milwaukee and was associated with the city health department. On Dec. 7, 1941 he transferred to the Farm Security Administration as senior medical officer and was later commissioned in the U. S. Public Health Service and reassigned to the Farm Security Administration. In January 1945 he joined the United Nations Relief and Rehabilitation Administration as director of health in the Middle East Mission, Cairo, Egypt. Later he went to Vienna as acting chief medical officer to UNRRA in Austria. He returned to the United States in January 1946 and joined the staff of the Office of Vocational Rehabilitation.

MEDICAL OFFICERS RELEASED BY THE NAVY

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

Arkansas

Barnett, Horace C.......Heber Springs
Clark, William A..........Little Rock
Taylor, Charles A.......Evening Shade
Woods, Paul H...........N. Little Rock

California

Andersen, George C.....Hermosa Beach
Baker, Edward W.......San Francisco
Bassett, James B..............Orinda
Beland, Arthur J.................Napa
Best, Elbridge J.........San Francisco
Boles, Albert.................Oakland
Bowman, Ralph H.........Corte Madera
Dittes, William L............Corcoran
Finke, Howard W..........Lynnwood
Gundelfinger, Benjamin F.......Berkeley
Johnston, Ian B..............Berkeley
Lyon, Richards P.......Hidden Valley
Maino, Vernon J.........San Francisco
Martin, James W.........San Francisco
McKenna, John F............Berkeley
Naman, Marvin J..............Fresno
Quarry, Paul T.............Santa Rosa
Reilly, Eugene V.........San Francisco
Richards, George H.......San Francisco
Smith, Richard C.........San Francisco
Smitter, Robert C.......San Francisco
Steinmetz, John R.............Hayward
Stockton, Andrew B.....San Francisco
Swanson, Marion A.......San Francisco
Sweeney, Alvin R. Jr...........La Jolla
Tufft, Robert W.........San Francisco
Watso, Robert W.............San Jose
Webb, Eugene M.............Berkeley
Wees, Marshall P.......San Francisco
Welke, Elton G.........San Francisco
Wood, David A.........San Francisco
Wrobel, Charles J.........Los Angeles

Florida

McGowan, Thomas R...........Tampa
Morris, Neal.................Pensacola
Zellner, Robert E.............Lakeland

Georgia

Baldwin, Marion A.........Fort Gaines
McClelland, Warren S.........Atlanta
McDuffie, Robert S.............Decatur
Morgan, Horace L...........Savannah
Reeve, Thomas E. Jr............Calhoun

Idaho

Baum, Mark.....................Ashton
Funk, Arthur P...................Boise
Hatch, Charles S............Idaho Falls

Illinois

Baker, Kenneth C...........Galesburg
Beil, Harry H.................Chicago
Bell, Needham E. Jr.......Bloomington
Domm, Sheldon E...........Naperville
Gregowicz, John J..........E. St. Louis
Ketteman, Charles H...........Chicago
Kionka, Paul F...........Melrose Park
Mann, Raymond J.............Chicago
McLellan, Samuel G.........Evanston
Newman, Melvin M...........Chicago
Roble, Andrew.................Chicago
Samelson, Charles F...........Chicago
Shively, J. Paul...............Chicago
Sinow, Garland S...............Dixon
Stein, Irving F. Jr.............Chicago
Stuermer, Harry W............Chicago
Sutton, George C.............Evanston
Svec, Floyd A..................Chicago
Tierney, James M.............Chicago
Twohey, Joseph T.............Chicago
Wittelle, Frank M..............Chicago
Wolff, Paul G..................Chester
Zvetina, James R..............Chicago

Indiana

Grodrian, Wayne E.......Fort Wayne
Johnson, Robert E.............Muncie
Lambert, C. W.............Indianapolis
Wood, Russell W.........Oakland City

Iowa

Sawin, John F......................Ames
Straub, Joseph J.............Dubuque
Svendsen, Reinert N..........Decorah
Tandy, Roy W...........Morning Sun
Thornton, Thomas F. Jr.......Waterloo
Walsh, William E.............Hawkeye
Westly, John S.................Manly
Young, George G..........Des Moines

Kansas

Freeman, Florian G.........Hutchinson
Hagen, Robert F.............Lawrence
Ratzloff, Dan O...........Kansas City
Stevenson, Charles E...........Parsons
Stone, William F. Jr............Norton
Wilson, Charles W.............Norton
Wolff, Frederick P. Jr.....Kansas City

Kentucky

Bell, William B...........Hopkinsville
Foster, Richard L.............Louisville
Lewis, Farren C...............Wrigley

Louisiana

Hebert, Warren H.........New Orleans
Smith, Robert C..........New Orleans
Wilkinson, Jacques D.......Alexandria

Maine

Brown, Eugene E...............Bangor
Butterfield, Wilfred I............Bangor
Leach, Edwin M...............Blue Hill
Webber, Lincoln D...............Kittery

Maryland

Fetter, William J. E.........Baltimore
Futterman, Perry............Baltimore
Smoot, Merrill C..........Hagerstown

Massachusetts

Brenner, Louis...............Dorchester
Brown, Robert H...........Hyde Park
Casterline, Donald G.............Malden
Clancy, Daniel H. Jr..........Weymouth
Cranley, John J. Jr.............Medford
Cruickshank, Frank S...........Boston
Curran, John F. Jr...........Worcester
Elliott, Frederick D.............Boston
Foote, John J.................Dorchester
Freedman, Lawrence Z.......Worcester
Goehring, H. D.....Newton Upper Falls
Hopkins, Lawrence T...Wellesley Hills
Kenny, Donald E...............Medford
Kunin, Kalman C..........New Bedford
Leach, Russell E..................Lowell
Maiella, Anthony M...........Brookline
Mansfield, Thomas R.......Framingham
Marco, Philip J..................Boston
Marsh, Carl G................Worcester
Patchett, Orval W............Amesbury
Peterson, Norvell L..............Boston
Petetsman, Jacob............Somerville
Robinson, James W.........Auburndale
Sennott, Francis W..........Cambridge
Smith, Leonard K............Springfield
Stone, Jacob M...............Brookline
Sweeney, John D.............Waltham
Tsolas, George J...........Watertown
Wales, Burton L. Jr..........Abington
Warren, Shields.................Boston
Warthen, Robert O...........Kensington
Watson, Wilfred M.........Northboro
Weiss, Jess B..................Brookline
Welch, Kenneth J..................Waban
Zanca, Ralph...................Marlboro

Minnesota

Eisenman, Walter..............Chisholm
Flom, Reynold P...........Minneapolis
Karlson, Karl E................St. Paul
Lewis, Charles W...........Minneapolis
Marshall, Clark M.........Minneapolis
Martin, Frank E...........Minneapolis
Schoeberl, Cletus B..............Slayton
Walker, Philip H.............Wayzata
Westover, Darrell E...........Richville
Wilder, Russell M. Jr.........Rochester

Mississippi

Magee, Louis M...............Natchez
Miller, Archie C..............Hazlehurst
Von Hasseln, Edmund W...Brooksville

Missouri

Juden, Alexander G.....Cape Girardeau
Kraft, Jacob..............Kansas City
Meritt, Joseph E. Jr.........Rhineland
Willmott, Robert O...........St. Louis

Nebraska

Kleager, Clyde L.....................Alda
Pester, George H.........Broken Bow
Protzman, Frank W.............Omaha
Weare, Clifford S............Stamford
Wilcox, Malcolm B..........Kearney
Wisner, Harry J. Jr.........Scottsbluff

New Hampshire

Baker, Sidney R..............Rochester
Dignam, William J..............Nashua
French, Rowland B.............Hanover
Sewell, Elmer M..............Greenland
Smith, Thomas J. Jr...............Dover
Sterling, Franklin W...........Hillsboro
Thibault, Hector H...........Greenville

New Jersey

Case, Clarence E. Jr.........Somerville
Harris, Carl A............Cedar Grove
Hoffmann, George T...........Orange
Jackson, Francis C...........Rutherford
Murphy, Ian D.............Ventnor City
Troast, Leonard..................Nutley
Padovano, Joseph..............Boonton
Van Mater, John S.....Highland Park
Weisbrod, Lawrence M.........Newark

New York

Ballew, James R.............New York
Belden, Daniel C.............New York
Berg, Irving D...............New York
Brezing, Robert P.........New Rochelle
Brockmyer, Merlin L.........Rochester
Brown, Philip...............New York
Buholtz, Wilbur S...........Churchville
Cavallarom, Salvatore E........Jamaica
Chessid, Sigmund E............Brooklyn
Clarke, Francis E.........Valley Stream
Davis, John E.....................Troy
Dichter, Lionel...................Bronx
DuBilier, Benjamin........Staten Island
Dworsky, Alexander...........Brooklyn
Dyke, Joseph S...............New York
Fagan, James H. Jr...........New York
Farley, William J.............Flushing
Fisher, Lyman R..............Waverly
Fountain, Gerald Jr..........Scarsdale
Frank, Nathan R..............Brooklyn
Fraser, William E...........Scarsdale
Gall, Henry......................Bronx
Genninger, Lewis E...........Bellerose
Gitlin, Louis F..................Jamaica
Goldberg, Robert S...............Bronx
Gottlieb, Mack L.............New York
Gorman, Gerald P.......Staten Island
Grosberg, Saul J.............New York
Guyer, Donald C...............Albany

MEDICAL OFFICERS RELEASED BY THE NAVY

New York—Continued

Hale, Harry W. Jr.	Stillwater
Harrison, Harlon W.	Albany
Henneman, Elwood	Pelham
Hoch, Peter C.	Verona
Hoge, Leo J. Jr.	Saratoga Springs
Houston, Charles S.	Great Neck
Howard, Samuel W.	St. Albans
Iaia, Bartolomeo D.	Auburn
Ippolito, Carlo A.	Bronx
Jenkins, Harry A.	Rockville Center
Johantgen, Henry F.	Rochester
Kayden, Herbert J.	New York
Kertzner, Bertram	Brooklyn
Klatzko, Morris	Brooklyn
Kleinman, Herman	Brooklyn
Knott, Nairn D.	Albany
Knox, William G. Jr.	Manhasset
Koloski, Eugene L.	Port Richmond
Krech, Sheppard Jr.	New York
LaVerdi, Charles Jr.	Bronx
Levitt, Earl	New York
Lohnaas, Harold	Brooklyn
McCutcheon, James G.	Marilla
Meltzer, Saul B.	Elmira
Milhauser, Jack W.	Brooklyn
Miller, Otis B.	Cedarhurst
Mott, Howard O.	Schenectady
Moyer, Jason K. Jr.	Binghamton
Noshay, William C.	Eggertsville
Pietraszek, Casimir F.	Buffalo
Radzimski, Eugene H.	Buffalo
Ross, Bernard	Brooklyn
Ruskin, Richard A.	New Rochelle
Sayer, Arthur	New York
Seal, Howard	New York
Scherl, Siegfried	Bronx
Smith, Alfred H. Jr.	Richmond Hill
Soiefer, Jack	Brooklyn
Stubenbord, John G. III	Douglaston
Thompson, Alden S.	New York
Thomson, Archibald W. Jr.	New York
Toothaker, Bernard L.	New Rochelle
Tortora, Anthony R.	Brooklyn
Trutletaub, Gerald N.	Brooklyn
Tumarkin, Bernard	New York
Turbin, Joseph	Brooklyn
Von Glahn, Harold D.	Brooklyn
Walker, Donald C.	Delanson
Walsh, John W.	Bellerose
Walsh, Robert E.	Elmira
Warner, Nathaniel	New York
Weissman, Morris P.	Bronx
Wilbur, Harry J.	Walton
Wilson, James R.	Utica
Wisengrad, Michael	Belle Harbor
Wood, Edward F.	Rochester
Wren, Robert S.	Ossining
Young, Willis W.	Watertown

North Carolina

Camblos, Joshua F.	Asheville
Hall, John M.	Elkin
Holden, William B.	Wake Forest
Lewis, Clifford W.	Beaufort
Lyda, Edgar W.	Winston-Salem
Trachtenberg, William	Winston-Salem
Watson, Wm. Mobley	Asheville

North Dakota

Dahlen, Gregory A. Jr.	Bismarck
Perkins, Neal C.	Grand Forks

Ohio

Bova, George S.	Toledo
Boyd, Foster J. Jr.	Cincinnati
Fening, Walter E.	Hamilton
Hamilton, Frederick G.	Cleveland
Maggied, Sol	Columbus
Manchester, Robert C.	Alliance
Sonnemann, Charles C.	Cincinnati
Wiseman, George R. Jr.	Amherst
Wulsin, John H.	Cincinnati
Zeligs, Meyer A.	Cincinnati

Oregon

Achterman, Walter H.	Eugene
Barclay, Charles G.	Portland
Cochran, Quinten W.	Portland
Goddard, Edward P.	Klamath Falls
Hall, Richard E.	Portland
Havard, Clarence E.	Grants Pass
Kavanaugh, John D.	Portland
Livingston, William K.	Portland
Loomis, John W.	Portland
McMurray, William R. Jr.	Portland
Mason, David C.	Beaverton
Meek, Edward C. Jr.	Portland
Patton, Robert W.	Portland
Spence, Harry Y.	Eugene
Toon, Robert W.	Aurora

Pennsylvania

Boughton, Robert M.	Erie
Brickhouse, Herman M.	Warren
Brown, Henry	Erie
Burkle, Joseph S.	Philadelphia
Calesnick, Benjamin	Philadelphia
Cooper, Albert F.	Wilkes-Barre
Corneal, Forrest B.	*Philadelphia*
Cressman, Paul G. Jr.	Lewistown
Doane, John H. Jr.	Mansfield
Eckenrode, Joseph L.	Lancaster
Erickson, Elmer W.	Irwin
Fargotstein, Ralph	Pittsburgh
Faris, Samuel S. II	Glenside
Franke, Frederick R.	Pittsburgh
Garey, James L.	State College
Gerber, Paul	Philadelphia
Gilchrest, James W.	Derry
Hallahan, John D.	Lansdowne
Harrison, Joseph Jr.	Villanova
Holland, Robert H.	Red Lion
Johnson, Thomas B.	Towanda
Kane, James A.	Dunmore
Knerr, Edgar D. Jr.	Coopersburg
LeFever, Robert S.	Gettysburg
Lehan, Thomas R.	Erie
Lichtenstein, Irving L.	Philadelphia
Lotz, Glenn W.	McKeesport
McBurney, James W.	Rochester
McCune, Wallace G.	Ellsworth
Meli, John J.	Charleroi
Nealon, Thomas F. Jr.	Jessup
Pelosi, Louis M.	Philadelphia
Politano, Victor A.	Point Marion
Scarpitti, William F.	Philadelphia
Schaefer, Robert L. Jr.	Jeannette
Schaeffer, William A.	Lancaster
Shiring, Francis J.	Pittsburgh
Stauffer, Herbert M.	Philadelphia
Sterner, Robert F.	Cheltenham
Williams, Bryan V.	Pittsburgh
Williamson, Neihl J.	Jersey Shore
Wilson, Joseph W.	Pittsburgh

Rhode Island

Bliss, Joseph A.	Woonsocket
Chapman, James G.	Pawtucket
Curran, Edmund B.	Edgewood
Lomasney, Thomas L.	Pawtucket
Lynam, Patrick J.	Jamestown
Murphy, William F.	Newport
Sonkin, Nathan	Pawtucket
Stoops, William A.	Newport

South Carolina

La Borde, Oscar	Columbia
Pringle, Robert A.	Charleston
Skinner, Charles B.	Hartsville
Thomas, Ben D.	York
Whitesides, William C. Jr.	York
Workman, John A.	Woodruff

South Dakota

De Richards, Paul	Sturgis
Feeney, Michael J.	Pierre
Perman, Harvey H.	Eureka
Stern, Charles A.	Sioux Falls
Thorpe, Virgil L.	Hudson
Vincent, John W.	Rapid City

Texas

Atkinson, George N.	Shamrock
Bailey, Joe W.	Austin
Buie, Neil D. Jr.	Marlin
Cameron, Bruce M.	El Paso
Daily, Louis Jr.	Houston
Gaddy, Howell R. Jr.	Lampasas
Gordon, William H. Jr.	San Antonio
Heiligman, Emmett M.	Overton
Lehmberg, Seth W.	Georgetown
Leifeste, Homer F.	Madisonville
Liles, Ralph	Houston
Mathis, Robert L.	San Antonio
Payne, Beverly C. Jr.	Beaumont
Rainer, James W.	Austin
Roach, Paul A.	Ladonia
Smith, Lex B.	Teague
Spencer, James R. Jr.	Galveston
Ward, James F.	Lubbock
Williams, Frank C. Jr.	Los Fresnos
Woodward, Joe W.	Sweetwater
Worley, Gordon Jr.	Austin

Utah

Adams, Richard P.	Manti
Barton, Ray H. Jr.	Salt Lake City
Dalton, Willis V.	Salt Lake City
Hughes, Grant B.	Salt Lake City
Johnson, Gordon S.	Salt Lake City
McMurrin, James A.	Logan
Merrill, Laville H.	Standardville
Sharp, Max W.	Lehi
Spencer, LeGrand D.	Logan
Sweeney, Michael J.	Salt Lake City
West, Charles D.	Ogden
Woolsey, Carl T.	Salt Lake City

Vermont

Agan, Robert W.	Bennington
Brown, Clarence H.	Rutland
Keenan, Edward A.	Burlington
Shorey, Winston K.	Lyndonville

Virginia

Craddock, Charles G. Jr.	Lynchburg
Stuart, Royal E.	Charlottesville
Terry, William S.	Gretna
Waters, Louis N.	Portsmouth

Washington

Goss, Clark C.	Seattle
Lauer, Paul R.	Seattle
Snyder, Richard V.	Seattle
Swinehart, Loy T.	Spokane

West Virginia

Aliff, Robert C.	Huntington
Bailey, Robert F.	Craigsville
Berry, Robert Z.	Flatwoods
Brown, Donald P.	Kingwood
Carlson, Frederick B.	Charleston
Carter, Warren S.	Huntington
Curry, George A.	White Sulphur Spr.
Edmiston, John M.	Buckhannon
Eckley, George M. Jr.	Beckley
Fankhauser, Robert K.	Parkersburg
Hogshead, George W.	Montgomery
Holswade, George R.	Spencer
Leonard, James B.	Parkersburg
Scott, Charles N.	Smithfield
Seabright, Howard L.	Wheeling
Vest, James C.	Whitesville
Wiser, Henry J.	Bluefield

Wisconsin

Chrest, Clarence P.	Madison
Coffey, William L. Jr.	Wauwatosa
Florin, Alvin C.	Fond du Lac
Lukes, Richard E.	Milwaukee
Millen, Francis J.	Milwaukee

Wyoming

Cranney, Wyndon D.	Auburn
Knebel, John A.	Buffalo
Sullivan, Bernard J.	Laramie

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education and public health.)

ALABAMA

University News.—The Medical College of Alabama, Birmingham, announces the receipt of two grants made to Joseph K. Cline, Ph.D., associate professor of biochemistry. Distillation Products, Inc., awarded $2,500 for research in vitamin E therapy, and a grant of $7,500 by the Research Corporation for a study of antianemic substances was made this month. In studying the antianemic substances he will work with substances that stimulate the regeneration of red blood cells and will attempt to determine the mechanism of their actions. Dr. Cline, formerly director of the laboratory of the nutrition clinic at the Hillman Hospital, was appointed to the faculty of the medical college in March. Dr. Joseph F. A. McManus has been appointed assistant professor of pathology at the Medical College of Alabama. Dr. McManus served in the Royal Canadian Army Medical Corps from September 1940 to 1945; he joined the Medical College of Alabama after doing research in histochemistry at the University Museum, Oxford, England. Clarence E. Klapper, Ph.D., and his wife, Margaret Strange Klapper, have been appointed assistant professor in anatomy and instructor in the department of medicine, respectively.

CALIFORNIA

Personal.—Dr. Willis L. Jacobus Jr. has been appointed athletic medical director of the University of Southern California, Los Angeles. He succeeds Dr. Packard Thurber Jr., who resigned after holding the position for twenty-one years to devote all his time to general practice.

Position Available.—The Los Angeles Psychiatric Service, an adult community mental hygiene clinic supported by the Community Chest, has an opening for a psychiatrist-director to give full time to the clinic. The requirements are that the director be a specialist certified in psychiatry and have some administrative experience. The clinic personnel includes volunteer psychiatrists, two psychiatric social workers and a psychologist. The salary is in accordance with qualifications. Address the Los Angeles Psychiatric Service, 507 South Westlake Avenue, Los Angeles 5.

CONNECTICUT

New Medical Director of Welfare Department.—Dr. Philip W. Fenney of West Haven has been appointed medical director of the Connecticut State Welfare Department. The appointment of Dr. Fenney, a veteran of World War II, is on a temporary basis with examination for the position to be held later, according to the statement of Commissioner Robert H. Smith. Dr. Fenney succeeds Dr. Leonard Parente, who resigned last month after four years with the department, to become health officer of Hamden.

Centennial Meeting of Hartford Medical Society.—As part of the observance of the one hundredth anniversary of its founding in 1846, contemporary members of the society reenacted an early meeting of the Hartford County Medical Society on September 16 at the Hunt Memorial Building, 38 Prospect Street, Hartford. The program closed with a dinner meeting and address by President G. Keith Funston of Trinity College on "Liberal Education and Its Relation to Medicine." Each member present received a copy of the historical volume published for the occasion and entitled "The First Century of the Hartford Medical Society."

Liaison Committee on Occupational Health.—The governing council of the Connecticut State Medical Society has appointed a liaison committee to the new Institute of Occupational Medicine and Hygiene at Yale University, New Haven. Members of the new committee are Dr. Thomas P. Murdock, Meriden, council chairman; Dr. Creighton Barker, New Haven, executive secretary, and Dr. Charles F. Yeager, Bridgeport, chairman of the society's committee on industrial health. The institute will be headed by Dr. Ronald F. Buchan, West Hartford, recently appointed assistant professor of industrial medicine, who will serve as the clinical director (The Journal, November 9, p. 591).

GEORGIA

Joint Meeting.—Dr. Frank H. Lahey, Boston, was among the speakers October 1 at a meeting which was the first annual session of the Georgia chapter of the American College of Surgeons and the fall meeting of the Fifth District Medical Society. The session, held in Atlanta, also included clinics. Dr. Lahey discussed "The Management of Lesions of the Stomach, Duodenum and Jejunum."

ILLINOIS

Personal.—The town of Kempton held a community dinner in the local high school November 3 to honor Dr. William G. Ross on his seventy-seventh birthday. Dr. Ross, who has practiced in Kempton for forty-three years, was presented with a radio.

Chicago

Walter Theobald Heads Medical Center Commission.—Dr. Walter H. Theobald on November 20 became chairman of the Medical Center Commission, succeeding Dr. Raymond B. Allen, who resigned to become president of the University of Washington.

Lecture by British Biochemist.—Dr. Douglas Robertson, professor of biochemistry, Middlesex Hospital Medical School, London, lectured at the University of Illinois College of Medicine November 8 on "The Nature of the Disturbed Calcium and Phosphorus Excretion in Thyrotoxicosis and Myxedema."

Charles Swift Retires.—Dr. Charles H. Swift, associate professor and secretary of the department of anatomy at the University of Chicago School of Medicine, has been retired with emeritus status, it was announced November 26. Dr. Swift, who has reached the university's automatic retirement age, has been associated with the university for the past forty-seven years; he graduated at Rush Medical College in 1910.

The Ranson Lecture.—Dr. Albert M. Snell, chief of the section on medicine, Mayo Clinic, Rochester, Minn., and professor of medicine in the Mayo Foundation, delivered the annual Stephen Walter Ranson Lecture, sponsored by the Phi Beta Pi Fraternity, at Northwestern University Medical School on Tuesday, December 3. The lecture was presented at Thorne Hall, on the Chicago campus of Northwestern University, at 5 p. m. Dr. Snell's subject was "Recent Advances in the Field of Hepatic and Biliary Disease."

Herman Smith Resigns at Michael Reese.—Dr. Herman Smith has resigned as executive director of Michael Reese Hospital to become a hospital consultant on a full time basis in Chicago. He leaves Michael Reese after twenty-six years' service. Dr. Morris H. Kreeger, assistant director of Mount Sinai Hospital, New York City, from 1940 to 1946, arrived at Michael Reese November 18 to take over the executive directorship of the hospital. Dr. Kreeger graduated at Jefferson Medical College in Philadelphia in 1935 with prizes in surgery, neurology and ophthalmology and was in general practice in Bloomfield, N. J., from 1937 to 1939.

INDIANA

Students Win Awards.—The Osterman awards of the Indiana University School of Medicine, Indianapolis, have been announced as follows:

First prize, $20, John Edward Ross, Experimental Hemothorax.
$15 prizes: Don G. Buck, Lesions of the Spinal Epidural Space Producing Cord Compression.
Charles E. Buck, The Bleeding Nipple.
Gilbert B. Causey, Early Diagnosis and Management of Small Intestinal Obstruction.
Charles C. Gullet, Vagotomy for Gastroduodenal Ulcer.
Paul William Holtzman, Regional Enteritis.
John W. Mason, Jaundice, Surgical Considerations.
Roy V. Maxson, Traumatic Rupture of the Spleen.
$10 prizes: Davis A. Baltz, Congenital Cystic Lung. Pneumonectomy in a 3 Week Old Baby.
Robert P. Buckler, The Immersion Foot Syndrome.
Robert D. Cunningham, Causalgic States in Peace and War.
John H. Grant, Studies in Experimental Vascular Surgery.
George T. Lukemeyer, Shock and Refrigeration.
$5 prizes: John W. Geddes, Management of Abdominal Wounds in Warfare.
Oscar Green, Thrombophlebitis, Experience at an Army General Hospital.
August M. Kasper Jr., Refrigeration Anesthesia.
Theodore R. LeMaster, A Review of Posttraumatic Renal Injury.
John R. Porter, A Study of Shock in Battle Casualties.

The Osterman Prizes were established by Mr. H. Osterman, Seymour, in 1939 for outstanding papers by students in the medical school (The Journal, Nov. 25, 1939, p. 2011). The recipients are chosen by the editorial board of the *Quarterly Bulletin*, published by the medical school.

MARYLAND

New Radiology Department at Johns Hopkins.—Dr. Russell H. Morgan, former associate professor of radiology at the University of Chicago, has been made professor of radiology in the Johns Hopkins University School of Medicine and radiologist in chief at the Johns Hopkins Hospital, effective about January 1. Dr. Morgan will be in charge of a new department of radiology created at the university and the hospital. Radiology, formerly a section in the division of surgery, has been made an independent department of the two Hopkins institutions in order to provide better clinical service at the hospital, to improve instruction in the university and to promote research in this increasingly important field.

MASSACHUSETTS

Personal.—Dr. Abraham Cohen, Philadelphia, and Dr. Loring T. Swaim, Boston, were guest speakers at the recent convention of the International Society of Medical Hydrology at Buxton, England, on "Treatment of Arthritis."——Dr. Henry D. Chadwick, Cambridge, state health commissioner of Massachusetts from 1933 to 1938, retired recently as medical director and superintendent of the Cambridge Sanatorium, a position he had held since 1942.——Albert H. Hegnauer, Ph.D., Syracuse, N. Y., and Dwight J. Mulford, Ph.D., Boston, have been appointed associate professor of physiology and assistant professor of pharmacology, respectively, at Boston University School of Medicine.

MISSOURI

Personal.—On September 4 Andrew H. Panetiere Post number 490 honored Dr. Edwin C. White, Kansas City, particularly in gratitude for the news letter which he edited and which was sent to the members of the Jackson County Medical Society, including those who were in service.

Faculty Changes.—Recent faculty changes in the St. Louis University School of Medicine include the following: Dr. Percy J. Carroll (brigadier general, U. S. Army, retired), assistant dean and professor of public health; Dr. Mark C. Wheelock, assistant professor of pathology, and Dr. Paul A. Murphy, assistant professor of pharmacology.

Lawyer Appointed to Health Post.—On August 31 Samuel Marsh, a lawyer of Kansas City, was named by Governor Donnelly as director of public health and welfare. The appointment is subject to confirmation by the senate. As director of the department of public health and welfare Mr. Marsh is administrative head of three divisions, public health, mental diseases and welfare. According to the Kansas City *Star* his office will manage the state hospitals and the social security program in Missouri.

NEW YORK

Cancer Teaching Day.—On December 12 a Cancer Teaching Day will be presented in Troy under the auspices of the Medical Society of the County of Rensselaer, Tumor Clinic Association of the State of New York, the state medical society and the New York State Department of Health Division of Cancer Control. The speakers will include:

Dr. Hayes Martin, New York City, Mouth Cancer.
Dr. Cushman D. Haagensen, New York City, Tumors of the Breast.
Dr. Louis C. Kress, Buffalo, Tumors of the Bone.
Dr. Richard B. Cattell, Boston, Malignant Tumors.
Dr Harold W. Dargeon, New York City, Tumors in Children.

New York City

The Brickner Lecture.—The Hospital for Joint Diseases announces that the 1946 Walter M. Brickner Lecture will be delivered by Dr. Arnold R. Rich, professor of pathology at the Johns Hopkins University School of Medicine, Baltimore, December 12, at the hospital. The subject is "Problems Relating to the Pathogenesis of Cirrhosis of the Liver."

Consulting Pneumatologist Named for Hospital.—Dr. Paluel J. Flagg was appointed consulting pneumatologist to the Manhattan Eye, Ear and Throat Hospital November 21. The action was taken by the board of directors of the hospital at the recommendation of the board of surgical directors. The action was said to stem from a resolution passed by the House of Delegates of the American Medical Association, December 4, 1945.

Julius Jarcho Honored.—Dr. Julius Jarcho was guest of honor at a dinner November 21 to mark his retirement as president of the medical board of Sydenham Hospital. A feature of the occasion was the dedication of the library of the hospital to him and named the Dr. Julius Jarcho Library. Dr. Jarcho has been associated with Sydenham Hospital for the past forty years and served as president of the medical board during the latter ten years. He is attending surgeon in obstetrics and gynecology at Sydenham and is the author of several textbooks and treatises on obstetrics and gynecology which are used in medical teaching. Dr. Jarcho graduated at Columbia University College of Physicians and Surgeons in 1904.

Erythroblastosis Fetalis Clinic.—The Jewish Memorial Hospital has established a clinic for the study and treatment of erythroblastosis fetalis under the direction of Dr. Harry Wallerstein, hematologist to the hospital, in collaboration with Drs. Milton J. Goodfriend, attending obstetrician, Michael Schuman, attending pediatrician, Alfred Angrist, director of laboratories, and Philip Levine, consulting serologist. The clinic solicits specimens for study from cases presenting implications of erythroblastosis fetalis. In suitable cases mothers will be accepted for admission to the antepartum clinic and/or delivery. Babies born outside this institution in whom the suspicion of erythroblastosis exists will also be accepted for admission. Further information will be obtained from the superintendent of the Jewish Memorial Hospital.

Portrait of Dr. Rowland G. Freeman.—On November 20 a portrait was unveiled of Dr. Rowland G. Freeman at the New York University College of Medicine. The portrait, a gift to the college by Dr. Rowland G. Freeman, son of the late Dr. Freeman, was painted by the artist William J. Whittemore, an intimate friend of the late Dr. Freeman. Dr. Freeman developed methods of studying the bacteria in milk. He with other members of the college faculty organized a milk commission supervising certified milk production in New York City. Dr. Freeman was the first secretary of the commission. He was also chairman at the time of his death on Nov. 14, 1945, a position he held for twenty-eight years. Dr. Freeman graduated at Columbia University College of Physicians and Surgeons. He joined the New York University faculty in 1898 as chief of the pediatric clinic. He was made professor of pediatrics in 1920, becoming emeritus with his retirement in 1930.

Grant-in-Aid for Tropical Medicine.—The department of preventive medicine, New York University College of Medicine, has received a grant-in-aid from the American Foundation for Tropical Medicine to assist in establishing a unit for the development of tropical medicine and parasitology in connection with Bellevue Hospital. The unit will consist of a clinician, Dr. Harry Most, a parasitologist, Donald V. Moore, Ph.D., and a technician. A diagnostic laboratory will be set up in connection with the third (New York University) division of Bellevue Hospital for the examination of blood and fecal specimens. The laboratory will also serve other divisions of the hospital as examinations are requested. It will also furnish teaching material for medical students. Dr. Most and Dr. Moore will act as consultants to the clinical staff and will conduct the teaching program in tropical medicine and parasitic diseases in the medical school. Dr. Most has been on leave of absence for service in the army. He has been in charge of the tropical medicine section of Moore General Hospital, Swannanoa, N. C. Dr. Moore comes to the department from the State Health Department of Texas, where he has been in charge of the parasitology division of the state laboratory.

NORTH CAROLINA

Medical Lectures.—The Matheson Foundation Medical Lectures, sponsored by the Matheson Foundation and the Mecklenburg County Medical Society, was held in Charlotte at the Hotel Charlotte, October 31-November 1. Among the speakers were:

Dr. Henry L. Bockus, Philadelphia, Clinical Aspects of Infectious Hepatitis.
Dr. Donald G. Anderson, Boston, The Treatment of Infections with Penicillin and Streptomycin.
Dr. Isidor S. Ravdin, Philadelphia, Some Problems in Biliary Tract Surgery.
Dr. Edward A. Schumann, Philadelphia, Obstetric Hemorrhage.
Drs. Cyrus C. Sturgis and Carl V. Weller, Ann Arbor, Clinicopathologic Conference.
Dr. Francis E. McDonough, Boston, The Diagnosis and Medical Management of Lesions of the Stomach, Duodenum and Jejunum.
Dr. Frank H. Lahey, Boston, The Surgical Management of Lesions of the Stomach, Duodenum and Jejunum.

OHIO

Research on Coronary Occlusion.—Under two grants totaling $7,000 from the U. S. Public Health Service Dr. Roy W. Scott, professor of clinical medicine, Western Reserve University School of Medicine, and his associates at University and City hospitals in Cleveland, will administer carefully controlled doses of Dicumarol (3-3'-methylene-bis-[hydroxycoumarin]) to men and women hospitalized after attacks of coronary occlusion. In announcing the project Dr. Scott said he was encouraged to carry on the work as a result of a few reports in the medical literature indicating that Dicumarol may appreciably lower the death rate from heart disease by preventing the clots from blocking the circulation in other parts of the body. As president of the American Heart Association last year Dr. Scott appointed a committee to direct a cooperative study of Dicumarol by several institutions. For this study the U. S. Public Health Service has contributed a total of $35,000. At University Hospitals the program is being conducted by Dr. Joseph M. Hayman Jr., professor of clinical medicine and therapeutics at Western Reserve, and Dr. Harold Feil, associate clinical professor of medicine.

OKLAHOMA

Changes in Health Officers.—Included among recent appointments to the Oklahoma State Department of Health are those of Drs. George W. Winn, Lawton, county superintendent of health of Comanche County; James M. Gordon, Ardmore, county superintendent of health of Carter County; William W. Cotton, Atoka, county superintendent of health of Atoka County, and Alfred R. Sugg, Ada, county superintendent of health of Pontotoc County.

PENNSYLVANIA

Philadelphia

Personal.—Dr. Abraham Cohen was recently a guest speaker at the convention of the International Society of Medical Hydrology in Buxton, England, on the "Treatment of Arthritis."——Dr. William P. Bager Jr., medical director and internist, St. Luke's Hospital, Bluefield, W. Va., has been appointed associate medical director of Sharp and Dohme.

Penicillin or Silver Nitrate in Ophthalmia Neonatorum.—On November 7 a resolution was presented to the Eye Section of the Philadelphia County Medical Society requesting the appointment of three members, one an ophthalmologist, one a gynecologist and one a bacteriologist, to constitute a committee known as the Committee on the Prevention of Ophthalmia Neonatorum. The resolution urged that this committee undertake a study with the view of determining whether silver nitrate may be abandoned altogether and whether penicillin would be more effective in the treatment of the expectant mother and as a preventive agent in the eyes of the newborn. The resolution points out that the action should be taken because penicillin is universally recognized as a bacteriostatic agent possessing chemotherapeutic properties against the gonococcus and other organisms; silver nitrate has been used since 1884 as a chemical to prevent ophthalmia neonatorum caused by the gonococcus and other organisms; ophthalmia neonatorum has not been completely eliminated despite the use of silver nitrate; silver nitrate in 1 and 2 per cent solutions may cause a chemical conjunctivitis; the prevention of ophthalmia neonatorum is concerned primarily with the prevention of gonorrhea in the expectant mother, and gonorrhea may be treated and cured in the expectant mother with the use of penicillin.

Pittsburgh

The Huggins Memorial Lecture.—On November 22 Dr. Paul R. Cannon, chairman, department of pathology, University of Chicago School of Medicine, lectured on "Clinical Approach to the Problem of Protein Deficiency Disease." The lecture was given at the University of Pittsburgh School of Medicine under the auspices of chapter Nu of the Phi Delta Epsilon Fraternity.

VERMONT

State Health Council Created.—On November 15 the Vermont state health council was organized to coordinate health programs in the state. Representatives of twenty-nine Vermont organizations participated in the initial meeting. The meeting was sponsored by the Vermont State Medical Society. The constitution of the new council embodies many of the principles of the governor's twenty-two point health program. According to the Rutland *Herald*, November 16, the object of the new group is revision and expansion of the state public health department, "integration" of public health department and college of medicine laboratories, establishment of small rural health centers, expansion of nutrition programs, control and eradication of tuberculosis, venereal diseases, undulant fever and other communicable diseases, also diagnosis, care and treatment for other diseases and increased maternal health services, child health service expansion to include medical and dental examinations and immunization, and extension of treatment and care of the mentally ill and mentally deficient. Other programs outlined included support of the college of medicine at the University of Vermont, promotion of hospital development, efforts to make the practice of medicine in rural areas more attractive, correct pay inequalities for health and hospital personnel, promotion of the education, training and welfare of the nursing and the pharmaceutical professions and the supporting of legislation to the ends outlined. Dr. Frank C. Angell, Randolph, president of the Vermont State Medical society, was elected chairman. Other officers include Howard Reid, D.D.S., Vermont State Dental association, vice chairman, Mr. John W. Brownlee, executive secretary, Vermont State Medical society, secretary, and Stanley G. Judd, commissioner of agriculture, treasurer.

WEST VIRGINIA

Approved New Cancer Center.—At a meeting of the executive committee of the West Virginia Cancer Society, Inc., October 31, at Clarksburg Mr. Homer Gebhart of Huntington, treasurer of the society, was named disbursing agent for all county and local cancer organizations. The establishment of a cancer information center, with a cancer field worker recommended by the project committee, was unanimously approved. The committee directed that, of the 60 per cent of funds realized from cancer drives which will remain in this state, 15 per cent is to be utilized for administrative expenses at the state offices. The remaining 45 per cent may be expended as follows: An approved project in any county may spend up to 45 per cent of that county's annual contribution. If the full 45 per cent is not sufficient to finance the approved project, the executive committee can appropriate from the state general fund a sufficient amount to take care of the balance, and an adjoining or adjacent county to an approved project may allocate its entire 45 per cent to that project. The preliminary report of the project committee, submitted by Dr. Paul R. Gerhardt, chairman, and Drs. Thomas L. Harris and Richard O. Rogers and approved by the executive committee, provides that all local projects must have the approval of the cancer committee of the local medical society. The committee unanimously disapproved the affiliation of county cancer organizations with community chest drives.

Hospital Survey.—The sum of $22,500 has been allocated by Governor Clarence W. Meadows from his emergency fund to cover the state share of the cost of a statewide hospital survey, which will be made under the provisions of the recently enacted Hill-Burton bill whereby Congress appropriated $75,000,000 a year for five years for the construction of hospitals, medical centers and clinics throughout the country. West Virginia's share is $1,555,000 per year. This state will receive $11,250 from the federal government to help finance the survey which is required under the provision of the bill. The survey will be under the immediate supervision of Dr. Newman H. Dyer, state health commissioner. Dr. Paul R. Gerhardt, director of the division of cancer control, will serve as consultant and medical adviser. Much of the preliminary work has already been completed by Mrs. George Fordham, a member of the state health department's administrative staff. It is expected that the budget, which was prepared and mailed to Washington early in November, will be approved without delay, and it is hoped that the survey may be completed within the next four to five months. An advisory committee is to be appointed by the governor which must approve any report that is submitted to Washington for consideration by the U. S. Public Health Service. The bill provides for the construction of hospitals, clinics and medical centers by states, counties, municipalities and nonprofit organizations.

WISCONSIN

Helmholz Lecture.—Sir Lionel E. H. Whitby, C.V.O., M.C., M.A., M.D. Cantab., F.R.C.P. Lond., D.P.H., currently regius professor of physic, department of medicine, University of Cambridge, and honorary consulting hematologist to the Royal Army Medical Corps, delivered the A. C. Helmholz Lecture before the faculty and students at the school of medicine, University of Wisconsin, November 19. The subject of the lecture was "Hematologic Effects of Radiation."

Annual Preceptors Meeting.—On November 22-23 the University of Wisconsin Medical School resumed its annual scientific meeting for the associated teaching staff of preceptors. The preceptorial staff consists of physicians in various localities throughout the state and carries out a part of the extramural teaching of senior medical students. Each fourth year medical student spends twelve weeks with one of the preceptorial groups. This is made possible by making the fourth year of the medical course twelve months in length rather than nine months. The program was arranged by the faculty of medicine in Madison and took place in the auditorium of the Service Memorial Institute building of the medical school and in the wards of the State of Wisconsin General Hospital. The program included:

Paul F. Clark, Ph.D., Oswald S. Orth, Ph.D., and Dr. Ovid O. Meyer, Symposium on the Antibiotics.
Dr. Sture A. M. Johnson, Cutaneous Manifestations of Some Common Medical Conditions.
Dr. Edgar S. Gordon, The Management of Some Difficult Metabolic Problems.
Dr. Daniel Murray Angevine, Fatal Pulmonary Embolism.
Dr. William D. Stovall, Hemolytic Reactions, Transfusions and Erythroblastosis.
Dr. Warren E. Gilson, Electronics in Research and Clinical Medicine.
Drs. Helen A. Dickie and Joseph W. Gale, Current Medical and Surgical Aspects of Tuberculosis.
Dr. William S. Middleton, Some Medical Aspects of World War II.

GENERAL

Congress on Obstetrics and Gynecology.—The American Congress on Obstetrics and Gynecology will be held in the Municipal Auditorium in St. Louis, Sept. 8-12, 1947. The second congress was held in the same place in 1942 and the first congress in Cleveland in 1939. Dr. Fred L. Adair, Chicago, is again general chairman.

Fellowship in Medicine.—The American College of Physicians offers a limited number of research fellowships, designed to provide an opportunity for research training either in the basic medical sciences or in the application of these sciences to clinical investigation. They are for the benefit of physicians who are in the early stages of their preparation for a teaching and investigative career in internal medicine, pediatrics and other allied fields. Assurance must be provided that the applicant will be acceptable, and the laboratory will supply the facilities necessary for the proper pursuit of the research. The term of appointment is for one year, usually beginning on July 1. The stipend will be from $1,800 to $3,000 a year. Application forms will be supplied on request to the American College of Physicians, 4200 Pine Street, Philadelphia 4, and must be submitted in duplicate, with a recent photograph of the applicant. It is desirable that applications be filed by December 1 each year. Awards will be made on or about January 1. Dr. Reginald Fitz, Boston, is chairman of the committee on fellowships and awards.

Southern Surgical Association.—The fifty-eighth annual session of the Southern Surgical Association, Hot Springs, Va., will be held December 10-12 under the presidency of Dr. Daniel C. Elkin, Atlanta, Ga. Included among the speakers are:

Dr. Winchell McK. Craig, Rochester, Present Status of the Surgical Treatment of Hypertension.
Drs. Elmer C. Bartels and Frank H. Laney, Boston, Use of Thiouracil, Thiobarbital and Propyl Thiouracil in Patients with Hyperthyroidism.
Dr. Richard W. Te Linde, Baltimore, Surgical Treatment of Urinary Incontinence in Women.
Dr. Guy W. Horsley, Richmond, Va., Treatment of Cancer of the Breast in Premenopausal Patients with Radical Amputation and Bilateral Oophorectomy.
Drs. Willard H. Parsons, Vicksburg, Miss., and John S. Harter, Louisville, Ky., Pulmonary Resection for Gangrene of the Lung.
Dr. Frank P. Strickler, Louisville, Ky., True Cavernous Hemangioma of the Uterus.

At the association dinner Wednesday evening Dr. Elkin gave his address entitled "The Georgia Blister and Critic" and Francis Pendleton Gaines, LL.D., president, Washington and Lee University, Lexington, Va., spoke on "Lee: Leader of an Educational Renaissance."

"The Challenge of the Future."—The National Society for Crippled Children and Adults will hold its silver anniversary convention at the Palmer House, December 9-11. The theme of the convention will be "The Challenge of the Future." Among the speakers will be:

Dr. Waldo E. Nelson, Philadelphia, Convalescent Care for the Handicapped.
Dr. Arthur C. Bachmeyer, Chicago, Developments in Hospital Planning of Interest to Workers for the Handicapped.
Dr. Morris Fishbein, Editor, The Journal, The Medical Care Program of the American Medical Association.
Dr. Alfred R. Shands Jr., Wilmington, Rehabilitation in General Hospitalization.

One general session Wednesday morning, December 11, will be devoted to consideration of the care of the children with cerebral palsy with the following speakers:

Mr. Lawrence J. Linck, Chicago, A National Cerebral Palsy Program.
Jayne Shover, Chicago, Cerebral Palsy Across the Nation.
Dr. Winthrop M. Phelps, Cockeysville, Md., Treatment of Cerebral Palsy.
Dr. Temple S. Fay, Philadelphia, Causal Aspects of Cerebral Palsy.
Dr. Leslie B. Hohman, Baltimore, Assuring Social Acceptance of Cerebral Palsied Children.
Dr. Earl R. Carlson, Pompano Beach, Fla., Educational Needs of the Cerebral Palsied Child.
Dr. Meyer A. Perlstein, Chicago, Recent Advances in Drug Therapy for Cerebral Palsy.
Participation by parents of cerebral palsied children, "As I See It."

Mead Johnson & Company B Complex Award.—Nominations are solicited for the 1947 award of $1,000 established by Mead Johnson and Company to promote researches dealing with the B complex vitamins. The recipient of this award will be chosen by a committee of judges of the American Institute of Nutrition, and the formal presentation will be made at the annual meeting of the institute, May 18-22, 1947. The award will be given to the laboratory (nonclinical) or clinical research worker in the United States or Canada who, in the opinion of the judges, has published during the previous calendar year, January 1 to December 31, the most meritorious scientific report dealing with the field of the B complex vitamins. While the award will be given primarily for publication of specific papers, the judges are given considerable latitude in the exercise of their function. If in their judgment circumstances and justice so dictate, it may be recommended that the prize be divided between two or more persons. It may also be recommended that the award be made to a worker for valuable contributions over an extended period but not necessarily representative of a given year. Membership in the American Institute of Nutrition is not a requisite of eligibility for the award. To be considered by the committee of judges, nominations for this award for work published in 1946 must be in the hands of the chairman of the nominating committee by Jan. 15, 1947. The nominations should be accompanied by such data relative to the nominee and his research as will facilitate the task of the committee of judges in its consideration of the nomination. The chairman is Robert R. Sealock, Ph.D., Department of Chemistry, Iowa State College, Ames, Iowa.

Merck Fellowships in Natural Sciences.—Merck & Co. has established a group of fellowships in natural sciences to be administered by the National Research Council. Not to exceed ten in number, the fellowships are to assist young men and women who have demonstrated ability in research in the chemical and biologic sciences. The fellowships will provide advanced training in these fields. They are open to citizens of the United States who have already acquired the training in chemistry or biology represented by the degree of Ph.D. or its equivalent. The initial appointment will be for a term of one year, renewable for a second, and in exceptional cases for a third. Fellows will be encouraged to undertake their fellowship work in institutions other than those in which their original training has been obtained. The amount of the annual stipend, which will be in the range of $2,500 to $5,000, will be determined by individual circumstances. An allowance for necessary travel will be available in addition. An amount of $500 or more will be provided annually for the institutional expenses of each successful candidate. Applications for Merck Fellowships should be filed by Jan. 15, 1947. Decisions concerning awards will be made as soon as practicable after March 1, 1947. The fellowships will become effective on July 1, 1947. Address communications to the Merck Fellowship Board, National Research Council, 2101 Constitution Avenue, Washington 25, D. C. Members of the Merck Fellowship Board are:

Alfred N. Richards, Ph.D., chairman, University of Pennsylvania School of Medicine.
George W. Beadle, Ph.D., California Institute of Technology.
Hans T. Clarke, D.Sc., Columbia University College of Physicians and Surgeons, New York.
George O. Curme Jr., Sc.D., Carbide and Carbon Chemicals Corporation, New York.
René J. Dubos, Sc.D., Rockefeller Institute for Medical Research, New York.
The chairman, National Research Council, Washington, D. C., ex officio.

Marriages

Wallace C. Ward, Raleigh, N. C., to Miss LaRene Slater of New Orleans and Apalachicola, Fla., at Charlotte, N. C., August 8.

Raymond Crawford Ramage, Jacksonville, Fla., to Miss Marguerite G. Taylor in Morristown, Tenn., August 24.

Robert N. Brown, Altadena, Calif., to Miss Rosalie Rumsey of Potterville, Mich., in Glendale, Calif., in September.

Edmund Rhett Taylor, Rochester, Minn., to Miss Mary Baldwin Herbert of Columbia, S. C., September 6.

Dale Quinn Furnell, St. Paul, to Miss Phyllis Lovaun Jacobson of St. James, Minn., June 15.

Edward Henderson McGehee to Miss Carolyn Dunn, both of Mobile, Ala., September 10.

Charles Richard Yoder to Miss Edith King, both of Chicago, September 14.

Deaths

Howard Merrill Clute ⊕ Brookline, Mass.; Dartmouth Medical School, Hanover, N. H., 1914; born in North Berwick, Maine, January 10, 1890; served as professor of surgery at the Boston University School of Medicine; secretary of the Section on Surgery, General and Abdominal, American Medical Association, from 1932 to 1935, when he was elected chairman; member of the American Surgical Association, Southern Surgical Association, American Society for the Study of Goitre and the Société Internationale de Chirurgie; member and past president of the Boston Surgical Society; fellow of the American College of Surgeons; member of the founders group of the American Board of Surgery; for many years associated with the Lahey Clinic; served as chief of the surgical service at Carney Hospital in South Boston; for many years chief of the surgical service at Massachusetts Memorial Hospitals, where, in recognition of his administrative ability, he was elected to the board of trustees; on the staffs of the Burbank Hospital in Fitchburg, Mass., New England Baptist and New England Deaconess hospitals in Boston; served in the medical corps of the U. S. Army during World War I and was honorably discharged with the rank of major; received the honorary degree of doctor of science from Dartmouth in 1941; died suddenly September 19, aged 56, of coronary thrombosis.

David A. Stanton, High Point, N. C.; Vanderbilt University School of Medicine, Nashville, 1887; born in Level Cross, N. C., May 24, 1859; member of the American Medical Association; honorary member, formerly vice president and secretary of the Medical Society of the State of North Carolina; past president and first secretary of the Guilford County Medical Society; fellow of the American College of Surgeons; served as resident surgeon of the Southern Railway, city health officer, medical director of the Colonial Life Insurance Company, mayor of High Point, member of the board of nursing examiners and state board of health; for many years chairman and treasurer of the city school board; served as city councilman; a charter member of the Perpetual Building and Loan Association, founded in 1901, which he served as first vice president and retired as president to become a member of the board of directors; director of the Pickett Cotton Mills; vice president of the High Point Savings and Trust Company; served on the staffs of the Guilford General Hospital and the High Point Memorial Hospital; died September 5, aged 87, of cardiovascular renal disease.

Sidney Samuel Weinstein, Denver; University of Tennessee College of Medicine, Memphis, 1929; member of the American Medical Association; served as an instructor of pediatrics at the University of Colorado School of Medicine; specialist certified by the American Board of Pediatrics; served on the staffs of the Children's, Beth Israel, Colorado General and Denver General hospitals; began active duty as a lieutenant commander in the medical corps of the U. S. Naval Reserve in October 1942; service terminated Jan. 30, 1946; died September 12, aged 41, of coronary thrombosis.

Oliver Goldsmith Tinkham ⊕ Boston; Tufts College Medical School, Boston, 1905; member of the New England Obstetrical and Gynecological Society; fellow of the American College of Surgeons; served as instructor in surgery at his alma mater; on the staffs of the Massachusetts Woman's Hospital, Boston, Newton (Mass.) Hospital and Symmes Arlington Hospital, Arlington; on the associate staff of the New England Baptist Hospital, Boston, and Cambridge Hospital, Cambridge; surgeon, Boston Dispensary and Boston Floating Hospital; died September 10, aged 67, of carcinoma.

Henry Wellington Banks, Norwood, Pa.; Medico-Chirurgical College of Philadelphia, 1902; member of the American Medical Association; died September 24, aged 71.

Eugene Fogle Beard, Somerset, Ky.; University of Louisville Medical Department, 1911; member of the American Medical Association; served during World War I; surgeon for the Southern Railway; died September 19, aged 64, of heart disease.

George Gernon Bergeron ⊕ Ludlow, Mass.; Temple University School of Medicine, Philadelphia, 1917; served in France during World War I; school physician; died September 26, aged 55, of carcinoma of the lung.

Alick Bernstein, Chicago; University of Illinois College of Medicine, Chicago, 1916; member of the American Medical Association; died April 4, aged 52.

Leonard Rudolph Boen, Bauxite, Ark. (licensed in Arkansas in 1903); member of the American Medical Association; died at Clarksville September 11, aged 63.

Harry Rich Bolan, Cambridge, Mass.; Middlesex College of Medicine and Surgery, Cambridge, 1915; died September 25, aged 63, of hypertensive heart disease.

Edward Jesse Burnett, Los Angeles; Kansas City (Mo) Medical College, 1903; died July 18, aged 67.

James Roderick Butler, Mountain City, Tenn. (licensed in Tennessee in 1912); member of the American Medical Association; served as mayor of Mountain City and as county health officer; died September 28, aged 57, of carcinoma.

L. D. Carter, West Liberty, Ky.; Kentucky School of Medicine, Louisville, 1882; died in Lexington September 24, aged 92.

Jediah Hussey Clark, Winter Park, Fla.; Medical College of Indiana, Indianapolis, 1895; past president of the Fayette-Franklin Counties (Ind.) Medical Society; served as secretary of the board of health of Connersville, Ind.; killed in an automobile accident near Macon, Ga., September 22, aged 77.

Bernard L. Cleary, Edgerton, Wis.; Rush Medical College, Chicago, 1900; died in the Edgerton Memorial Hospital September 21, aged 76, of carcinoma of the bladder and prostate

Joseph Wilmer Cox, Groesbeck, Texas; Medical Department of Tulane University of Louisiana, New Orleans, 1893; fellow of the American College of Surgeons; chief examiner, Limestone County Selective Service Board; medical director and owner of Dr. Cox's Hospital; died September 17, aged 78, of bronchopneumonia.

George S. Cressman, Pughtown, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1890; member of the American Medical Association; died September 26, aged 77, of Parkinson's disease.

William Ray Day, Fairfield, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1901; died September 19, aged 80, of leukemia.

Louis Sharpe Dunaway, Jr. ⊕ Conway, Ark.; University of Arkansas School of Medicine, Little Rock, 1929; served as a captain in the medical corps, Army of the United States, during World War II; died September 18, aged 46, of lymphosarcoma.

Welcome McClellan Elwell, Toledo, Ohio; Starling Medical College, Columbus, 1890; died September 29, aged 82, of cerebral hemorrhage.

Ernest Emory Esley, Walworth, N. Y.; Cleveland Homeopathic Medical College, 1902; member of the American Medical Association; served as health officer and fire commissioner; associate staff member of the Genesee Hospital in Rochester, where he died September 28, aged 76, of arteriosclerotic heart disease.

Albert S. Faulkner, Waynetown, Ind.; University of Louisville (Ky.) Medical Department, 1893; member of the American Medical Association; died September 25, aged 76, of cerebral hemorrhage.

Frank M. Gaines, Verden, Okla.; Kentucky School of Medicine, Louisville, 1894; died in August, aged 86.

Albert William Glathar ⊕ Pueblo, Colo.; University of Nebraska College of Medicine, Omaha, 1929; diplomate of the National Board of Medical Examiners; past president and secretary of the Pueblo County Medical Society; on the staffs of the Parkview Hospital and St. Mary's Hospital, where he died September 27, aged 45, of mycosis.

Frederick George Graves ⊕ Bethlehem, Conn.; Yale University School of Medicine, New Haven, 1892; past president of the Connecticut State Medical Society; died September 23, aged 77.

Harry Gus Greditzer, St. Louis; Washington University School of Medicine, St. Louis, 1912; member of the American Medical Association; on the staff of the Jewish Hospital; died September 27, aged 56, of coronary occlusion.

Charles Michael Hauslein, Omaha; Rush Medical College, Chicago, 1900; died in the Immanuel Hospital September 8, aged 73, of heart disease.

William Herbert Ingram, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1894; served as professor of pathology, bacteriology and histology at his alma mater, now known as the University of Pittsburgh School of Medicine; died July 4, aged 77, of cerebral hemorrhage.

Lawrence Leslie Irwin, Bloomington, Ill.; St. Louis University School of Medicine, 1907; member of the American Medical Association; on the staff of St. Joseph's Hospital, where he died September 17, aged 60, of cerebral hemorrhage.

Harry Breckenridge Jacobson, Dallas, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1918; member of the American Medical Association; died in Gaston Hospital August 31, aged 54, of congestive heart disease.

Maurice Kemp ⊕ Allentown, Pa.; Cornell University Medical College, New York, 1907; past president of the Lehigh Valley Medical Society; served during World War I and as examining physician for the induction center during World War II; died September 24, aged 60.

Clarence Perry Kummer ⊕ Buffalo; University of Buffalo School of Medicine, 1917; served during World Wars I and II; member of the American Heart Association; on the staff of the Deaconess Hospital; died September 16, aged 52, of coronary occlusion.

William Leonard, Fostoria, Ohio; Western Reserve University Medical Department, Cleveland, 1888; served during World War I; died September 23, aged 84, of heart disease.

Harold L. Lorentzen, Petaluma, Calif.; Hahnemann Hospital College, San Francisco, 1900; College of Physicians and Surgeons of San Francisco, 1902; died in a hospital at Santa Rosa September 6, aged 81, of bronchopneumonia, Parkinson's disease and arteriosclerosis.

Frank Mansfield Loring, Howard, S. D.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1885; died September 6, aged 85.

S. J. McGraw, El Dorado, Ark.; University of Arkansas School of Medicine, Little Rock, 1906; member of the American Medical Association; served as city and county health officer; died in the Warner Brown Hospital September 6, aged 72, of coronary thrombosis.

James Alexander MacKenzie, Boston; Tufts College Medical School, Boston, 1913; died September 16, aged 68, of heart disease.

George Ralph Maner ⊕ Tampa, Fla.; University of Georgia Medical Department, Augusta, 1893; on the courtesy staff of the Tampa Municipal Hospital; died July 23, aged 74, of coronary occlusion.

Harrie Breckinbridge Martin, Springfield, Ohio; University of Pennsylvania Department of Medicine, Philadelphia, 1903; for many years affiliated with the Springfield City Hospital; died September 1, aged 68, of heart disease.

Patrick Joseph O'Dea, Fitchburg, Mass., University of Vermont College of Medicine, Burlington, 1912; member of the American Medical Association; died September 25, aged 59, of coronary sclerosis.

Frederick E. Pierce, Chicago; National Medical College, Chicago, 1897; served on the school board and city council of Earlville, Ill.; died September 27, aged 85.

Robert Pierson Regester, Philadelphia; Jefferson Medical College of Philadelphia, 1916; died in the U. S. Naval Hospital June 8, aged 54, of hypertensive cardiovascular disease.

Thomas McPherson Roberts, Sweetwater, Tenn.; Kentucky School of Medicine, Louisville, 1894; member of the American Medical Association; died in the Sweetwater Hospital September 14, aged 77, of carcinoma of the liver.

Henry Joseph Rock, Wilmington, Del.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; member of the House of Delegates of the American Medical Association in 1904, 1907 and 1908; served as mayor of Aberdeen, S. D., where he was on the staff of St. Luke's Hospital; died September 9, aged 82, of cerebral hemorrhage.

Bertha May Satterlee, Bellevue, Ohio; Cleveland Medical College, 1894; died September 2, aged 78.

George Louis Schneider ⊕ Williamsport, Pa.; Jefferson Medical College of Philadelphia, 1911; fellow of the American College of Surgeons; past president of the Lycoming County Medical Society; served as county coroner; on the staff of the Williamsport Hospital, where he died September 17, aged 60, of coronary thrombosis.

Ralph Levi Souder, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1896; died July 23, aged 74, of cerebral hemorrhage.

Trond Neilson Stabo ⊕ Decorah, Iowa; Kongelige Frederiks Universitet Medisinske Fakultet, Oslo, Norway, 1894; died in Hayward, Wis., August 20, aged 76, of heart disease.

Allison A. Stamm, Mohnton, Pa.; University of Vermont College of Medicine, Burlington, 1883; member of the American Medical Association; died July 21, aged 90, of arteriosclerosis.

Oscar Blue Swayze, Auburn, N. Y.; Long Island College Hospital, Brooklyn, 1892; member of the American Medical Association; served on the staffs of the Mercy and Auburn City hospitals; died September 4, aged 82, of arteriosclerosis.

William Joshua Groot Thomas, Washington, D. C.; George Washington University School of Medicine, Washington, D. C., 1908; served during World War I; on the staffs of the Sibley Hospital and the Garfield Memorial Hospital, where he died September 22, aged 71, of cerebral thrombosis and diabetes mellitus.

Payne Alexander Tinsley, Dandridge, Tenn.; University of Louisville (Ky.) Medical Department, 1895; died September 5, aged 80, of heart disease.

Henry B. Trigg, Fort Worth, Texas; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1904; member of the American Medical Association; at one time on the faculty of his alma mater; died in a local hospital September 12, aged 66.

Karl William Wahlberg ⊕ Moline, Ill.; Rush Medical College, Chicago, 1912; past president of the Rock Island County Medical Society; past president and vice president of the Iowa and Illinois Central District Medical Society; served during World War I; on the staffs of the Moline Public and Lutheran hospitals; died September 29, aged 59, of myocardial infarction.

Armon French Wicks, Okolona, Miss.; College of Physicians and Surgeons, Memphis, Tenn., 1911; awarded the Purple Heart and Silver Star for service overseas during World War I; died in Memphis, Tenn., September 19, aged 66.

Benjamin A. Wilkes, North Hollywood, Calif.; Hospital College of Medicine, Louisville, 1882; served as president of the American Protestant Hospital Association; formerly superintendent of the Missouri Baptist Hospital in St. Louis and the Southeast Missouri Hospital in Cape Girardeau, Mo.; served as superintendent of the Hollywood Clara Barton Memorial Hospital in Los Angeles; died September 18, aged 88.

Ernest G. Wilson ⊕ Kankakee, Ill.; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1906; served on the staff of St. Mary Hospital; died September 25, aged 61, of coronary thrombosis.

Frederick Newton Winans, Franklin, N. Y.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1874; member of the American Medical Association; life member of the Otsego County Medical Society; for many years served as health officer, president of the board of trustees of the Delaware Literary Institute and as village president; honorary member of the staff of the Sidney (N. Y.) Hospital; died September 21, aged 95, of senility.

Charles Henry Wyatt ⊕ Kansas City, Mo.; University of Arkansas School of Medicine, Little Rock, 1931; interned at the Kansas City General Hospital, where he was a member of the staff; served on the staff of the Research Hospital, where he died September 15, aged 42, of acute hemorrhagic pancreatitis.

KILLED IN ACTION

Capt. Joseph C. Bulfamonte
M. C., A. U. S., 1907-1946

Joseph Charles Bulfamonte ⊕ Philadelphia; Georgetown University School of Medicine, Washington, D. C., 1932; interned at the Philadelphia General Hospital; served a residency at the Norristown State Hospital in Norristown, Pa., and the Ashland State Hospital in Ashland, Pa.; served on the staff of the Shamokin (Pa.) Hospital; began active duty as a first lieutenant in the medical reserve corps of the U. S. Army on April 19, 1941; later promoted to captain in the medical corps, Army of the United States; prisoner of war in the Philippine Islands; presumed dead March 14, 1946, aged 39.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Nov. 15, 1946.

Sanitary Condition of France

The present minister for public health is the last provisory minister of the present government of France. The poll of the 10th of November will establish for five years a new parliament and a long term government. The minister in a statement on his activity during this short period, read at a press conference, gave some insight on the sanitary condition of the country. He had to direct his efforts toward the solution of numerous urgent problems. A census of the hospital appliances has been taken and a scheme of reequipment, giving priority to war devastated "Départements" has been established. Reconstruction work has began at Nantes and Toulon; at Lorient and Brest the hospital system has been reestablished; at Rouen, Rennes, Rheims and Nancy the U. S. Army has given the hospitals back to the civil sanitary services. The second examination of the deported and prisoners having shown an increase in cases of tuberculosis, several new sanatoriums, among which is one in the Black Forest, in the French occupation zone, have been opened and numerous radiology cars have been bought. The working of the sanitary control at the frontiers has been reinforced and a sanitary team is in action at the Marseilles-Marignane air port; similar ones are being organized at Le Bourget and Orly. The first 600,000 sanitary books to be used for newborn children have been distributed. The circular of the 3d of September has created a section of sanitary education in each district. Penicillin, which, up to the present moment, was used only in special centers, is now available for every doctor. The Information Bulletin of the Ministry for Public Health contains a favorable statement of the epidemic condition of France last summer: Apart from the poliomyelitis epidemic, which is declining, two localized epidemics of typhoid and paratyphoid and some cases of Weil's disease have been reported.

Special circulars have ordered the reorganization of the psychiatric equipment and of the antituberculosis organizations. Laws concerning the protection of mothers and children have been promulgated and are in course of realization. The weak points, pointed out by the minister, are a delay in the modernization of equipment in hospital appliances, due to the war and Nazi occupation, and backwardness in the field of anesthesia, due to the impossibility of taking part in international congresses.

Several missions for study have been sent to the United States, Great Britain and Russia. There is a shortage of certificated nurses and district nurses; also a lack of cars for doctors and especially for country doctors; in order to make up for it army cars will be allotted to them. In order to avoid the parallelism of the activities of the Ministries for Public Health and of Social Security in the planning of the organization of the hospital system, an interministerial commission of coordination has been appointed. In the organization of the sanitary service, decentralization will be maintained: in each city of more than 20,000 inhabitants a municipal bureau of hygiene will be created and the power of the mayor, as regards public hygiene and sanitary police, will be increased. In every center of more than 10,000 inhabitants the establishment of "goutte de lait" (the drop of milk) organization for the supervision and the repartition of wholesome milk is foreseen as well as, in each department, the creation of a committee for the protection of unadopted children. A detailed plan for departmental public schools for nurses and district nurses is also completed and will be presented to the future parliament. The creation of sanitary "attachés" to the embassies in China, the United States and Russia are foreseen for 1947.

OSLO

(From a Special Correspondent)

Nov. 11, 1946.

Airplane Flights for Whooping Cough

The somewhat bizarre treatment of the intractable cough of whooping cough patients by sending them for a spin in an airplane does not seem to be remarkably successful. Inquiries recently addressed to the mothers of these patients sent aloft at the Fornebu airdrome near Oslo yielded the information that in 9 out of 33 cases improvement was noted from two to fourteen days after the flight. In most cases no improvement was effected, and all the parents achieved was the expenditure of 60 to 90 kroner for the flights and the exposure of their children to the risks incidental to flying. Dr. Alf Ödegaard, who has collected these data by interviewing the parents, has found little reason for recommending this treatment as a safe and rational procedure.

Diabetes Mellitus in Bergen

Dr. Per Hanssen of the staff of Ullevaal Hospital has published a study of diabetes in Bergen, the population of which is about 100,000. The object was to investigate the morbidity, age at onset, duration and the most frequent complications of diabetes, as well as the causes of death since the introduction of insulin treatment. He finds that, since the introduction of this treatment, it has become increasingly necessary to distinguish between deaths from diabetes and deaths from other causes in diabetic patients. To this end he suggests that in the future a distinction should be made between the two in the official notifications of death. The observations of Joslin and his fellow workers are made by Dr. Hanssen to serve as a background for his own investigations, which in more than one instance show that the behavior of diabetes is by no means the same in different countries.

The Shock Treatment of Psychoses in Norway

Dr. H. H. Dedichen, in charge of the private asylum associated with his name near Oslo, has completed a study of the shock treatment of psychoses as practiced in various Norwegian asylums. This 160 page study, issued by the Danish publisher Ejnar Munksgaard in 1946, covers a period of several years and deals with material collected in seventeen different asylums. In the autumn of 1938 Dr. Dedichen enlisted the cooperation of the medical superintendents of these asylums, many of which have also provided valuable control material. Altogether, 1,459 shock treated patients were compared with 969 comparable patients not given such treatment. Throughout this study Dr. Dedichen shows himself acutely conscious of the many pitfalls awaiting any one undertaking such a comparison, and he has taken special pains in matching the psychoses of the treated and not treated patients. One of his important conclusions is that the benefits of shock treatment are greatest and most effectively demonstrable when the duration of the mental disease in question has been less than one year before the institution of this treatment.

Heredopathia Atactica Polyneuritiformis

Dr. Sigvald Refsum, on the staff of the Neurologic University Clinic in Oslo, has published a comprehensive study of a familial syndrome which has not hitherto been described. This syndrome appeared in two Norwegian families not related to each other and living in two widely separated districts in Norway. Hemeralopia was observed in all 5 patients and atypical retinitis pigmentosa in 3 members of one family. In 2 members of the other family there were reasons to suspect this condition or a similar condition without pigmentation. Other characteristics of the syndrome were suggestive of chronic polyneuritis and ataxia. There were also certain other cerebellar phenomena.

Correspondence

IMPORTANCE OF BLOOD GROUP TESTS

To the Editor:—In the October 19 issue of THE JOURNAL an editorial comment stressed the value of blood tests for identification, especially in relation to blood samples and stains obtainable at postmortem examination. The article urged that "provision should be made to collect and save samples of blood at necropsies for eventual blood group tests much more regularly than is now the usual practice."

I should like to suggest another important place for complete blood grouping as a means of identification where mistaken identity has often caused much anguish and has even made history, namely in the delivery room. Nowadays most hospitals take prints of the mother's thumb and of the newborn infant's foot as a means of identification. Usually either or both prints are smudged beyond recognition and are worthless. Even if the prints are taken carefully, they soon become useless because the baby's foot pattern, unlike that of an older child, or adult, changes after a few months and cannot be duplicated.

Employing blood groups in identification of the newborn child would be far more useful because they are permanent and can always be duplicated. Furthermore, the blood sample can be obtained from the umbilical cord, thus identifying the child even before it leaves the mother's side for its first bassinet. This sample of blood, oxalated, in a corked tube of suitable size, can easily be fastened to the mother's body, thus preventing separation of the baby's means of identification from its mother during her transfer to her postpartum bed.

With the six blood groups and subgroups (O, A_1, A_2, B, A_1B and A_2B), the three MN types (M, N and MN), the agglutinogen P (P+ and P—) and the ten Rh-Hr types, 360 varieties of human blood can be differentiated. Surely, the chance of incorrectly identifying a baby in this way is far smaller than by means of a smudgy footprint which could not be duplicated in the event that the identity of the child should be questioned a few months after birth.

Admittedly, identification of babies through the medium of blood groups demands reasonable knowledge of grouping tests and of the use of the various testing serums, but, since such knowledge can be obtained and since all the necessary serums are becoming more readily available, there is no great or insurmountable obstacle in the path of its development.

MALCOLM A. HYMAN, M.D.,
Blood Transfusion Service,
Jewish Hospital of Brooklyn,
Brooklyn.

PENICILLIN INHALATION

To the Editor:—Reading the report on Penicillin Inhalation by Morse in THE JOURNAL October 5 and the editorial in the same issue on Penicillin Aerosol Therapy prompted me to suggest that a review of the literature on this subject would have provided a more dependable guide for the dosage, technic and results of the use of penicillin by inhalation.

Morse's observations on 25 patients with various types of upper respiratory complications seen during an influenza epidemic unfortunately lack evidence to support the statement that the dosage required by this method is less than that needed by intramuscular injections for the management of pulmonary infection. He employed a hand bulb nebulizer technic which produces coarse sprays, probably deposited largely in the oropharynx, trachea or larger bronchi. Small doses totaling 14,000 to 80,000 units of penicillin were given daily in four divided doses for two to four days. He stated "I have always used 4 drachms (15 cc.) in twenty-four hours." Referring to his most concentrated dilution, this would mean about 16,000 units in 4 cc. of solution for each treatment. This would require considerable hand pumping during an allotted ten minute period! Certainly such a technic is hardly feasible for a sick patient. This small dosage might possibly be valuable in the variety of milder respiratory complaints in his patients but would be entirely inadequate and dangerous for the control of the types of bronchopulmonary infections best managed by penicillin aerosol therapy.

Effective penicillin aerosol therapy can provide good topical effect as well as adequate blood levels. In 118 determinations I obtained blood levels which ranged from 0.015 to 0.225 unit per cubic centimeter with doses of 25,000 to 50,000 units. My studies and those by Barach and Olsen have repeatedly indicated the need for adequate doses, ranging from 200,000 to 500,000 units daily, for the satisfactory control of most bronchopulmonary infections. The saving in penicillin should not be used as an argument for employing this method.

The administration of penicillin by inhalation for respiratory infections is more than empirical therapy. A number of patients with lung abscess, bronchiectasis and nonpneumococcic pneumonias had received intramuscular penicillin and oral sulfonamides without demonstrated improvement before getting penicillin aerosol which resulted in cure. However, it does have a limited field of usefulness and should be employed only when definitely indicated and then with an effective technic. Such therapy is mainly indicated for patients having purulent sinusitis, bronchiectasis and lung abscess, especially in the presence of streptococcus, staphylococcus, pneumococcus or penicillin-susceptible strains of Friedländer's infections of the lungs and acute infectious laryngotracheobronchitis. In chronic bronchitis, bronchial asthma and pulmonary emphysema penicillin aerosol may or may not be preferable to systemic penicillin administration but it has been found equally beneficial. Every attempt should be made to identify the organisms from the nose, throat and sputum and, if possible, to determine the penicillin sensitivity before instituting adequate therapy.

MAURICE S. SEGAL, M.D., Boston.

Medical Motion Pictures

FILM REVIEW

Vaginal Flora During Pregnancy. 16 mm., color, silent, 790 feet, showing time twenty-two minutes (run at sound speed). Prepared in 1946 and procurable from A. Herbert Marbach, M.D., 1022 Medical Arts Building, Philadelphia.

A motion picture showing normal and abnormal flora during pregnancy with associated p_H changes. Gross changes of the vagina are also illustrated. An elaborate scientific film based on vaginal cultures made through a sterile tube introduced in the vagina, through which is passed a swab used for the culture.

This picture requires considerable knowledge of bacteriology. Parts, such as the preparation of the hands in order to make these cultures, are overdone. The film requires additional explanatory titles in order that the average physician may fully appreciate its practical value. The type of audience recommended includes gynecologists, medical students, interns and residents.

The film possesses educational value and should be repeatedly shown to establish knowledge of the complicated bacterial flora of the vagina.

The color photography is well done.

Bureau of Investigation

MISBRANDED PRODUCTS

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the Federal Security Agency

[EDITORIAL NOTE.—These Notices of Judgment are issued under the Food, Drug and Cosmetic Act, and in cases in which they refer to drugs and devices they are designated D.D.N.J. and foods, F.N.J. The abstracts that follow are given in the briefest possible form: (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the date of shipment; (4) the composition; (5) the reason for the charge of misbranding, and (6) the date of issuance of the Notice of Judgment.]

Asthma Tea.—Manning Herb House, Bessemer, Ala. Shipped March 30, 1942. Composition: essentially roughly ground plant material, identity not reported. Misbranded because label falsely represented product as efficacious in preventing, curing or treating asthma, and because label misstated quantity of contents.—[*D. D. N. J., F. D. C. 1043; March 1945.*]

Balm and Gilead Herb Tonic.—Manning Herb House, Bessemer, Ala. Shipped March 30, 1942 Composition: plant drug extractives (no alkaloids), a small amount of gum resin, reducing sugar, and water. Misbranded because labeling falsely represented it as helpful for asthma cough and chronic cough, and as a tonic for these conditions.—[*D. D. N. J., F. D. C. 1043; March 1945.*]

Brom-Acet.—Purity Drug Company, Inc., New York. Shipped June 18 and 23 and July 11, 1942. Composition: from 10.4 to 11.9 grains of sodium bromide per ounce, whereas label claimed 16 grains of this substance per ounce. Hence adulterated and misbranded.—[*D. D. N. J., F. D. C. 1022; March 1945.*]

Blood and Liver Capsules. — Manning Herb House, Bessemer, Ala. Shipped March 30, 1942. Composition: mercury (about 10 per cent) and black pepper reported. Misbranded because falsely represented to remedy disorders of blood, liver, stomach and bowels.—[*D. D. N. J., F. D. C. 1043; March 1945.*]

Blood Tonic.—Manning Herb House, Bessemer, Ala. Shipped March 30, 1942. Composition: plant debris (not identified), water-soluble plant extractives, and water, with a foul odor suggesting burdock or Jimson weed. Misbranded because title falsely represented article as a tonic—[*D. D. N. J., F. D. C. 1043; March 1945.*]

Cel-Bio Mineral Tablets. — Cel-Bio Mineral Food Company, Omaha. Shipped May 7 and 8, 1942. Composition of all tablets, numbered from 1 to 12, essentially lactose with a minute amount of a different mineral in each. All misbranded because of label misrepresentations as to their effects on various disorders.—[*D. D. N. J., F. D. C. 1042; March 1945.*]

Codecol.—Harvey Laboratories, Inc., Philadelphia. Shipped Sept. 22 and Dec. 12, 1942. Composition: not more than 6.73 grains of ammonium chloride or 0.1 grain of antimony potassium tartrate per fluid ounce, whereas falsely represented to contain larger amounts, and hence adulterated and misbranded.—[*D. D. N. J., F. D. C. 1017; March 1945.*]

Colusa Natural Oil, Colusa Natural Oil Capsules and Colusa Natural Oil Hemorrhoid Ointment.—Colusa Products Company, Berkeley, Calif. Shipped Jan. 31, 1941. Composition: the two first-named products consisted of crude petroleum oil, containing 0.75 per cent of sulfur, but not the camphor, turpentine, iodine or iodine compounds declared on label. Ointment was essentially zinc oxide, crude petroleum oil and small amounts of camphor, menthol and benzocaine in a base of lanolin and beeswax. Oil and Capsules misbranded because label falsely represented them as efficacious in treating eczema, psoriasis, acne, ringworm, athlete's foot, poison ivy, varicose ulcers and some other conditions; Ointment misbranded because label falsely represented it as efficacious in treating hemorrhoids.—[*D. D. N. J., F. D. C. 1040; March 1945.*]

"For Nervous Run Down Women."—A product of this name was sold by the Manning Herb House, Bessemer, Ala. Shipped March 30, 1942. Composition: essentially a small amount of plant debris (type not reported), water-soluble plant extractives and water. Misbranded because name falsely represented that the product would benefit nervous, rundown conditions in women.—[*D. D. N. J., F. D. C. 1043; March 1945.*]

Hart's Vitamin B Elixir.—E. J. Hart & Company, Ltd., New Orleans. Shipped June 8, 1942. Adulterated and misbranded because product contained only 13.8 milligrams of nicotinic acid per fluid ounce instead of the 20 milligrams falsely declared on label.—[*D. D. N. J., F. D. C. 1029; March 1945.*] Also declared adulterated and misbranded under the provisions of the law applicable to foods, as reported in *F. N. J. 5775.*

Kaps Colloidal Iodized Sulphur.—Jamco Company, New York. Shipped June 5 and Aug. 27, 1942. Composition: capsules containing mineral oil, sugar, small amounts of sulfur, and an iodide. Misbranded because label statement, "For use as an aid in the relief of arthritis due to sulphur deficiency," falsely represented product as effective for arthritis. —[*D. D. N. J., F. D. C. 1046; March 1945.*]

Manning's Asthma Plaster. — Manning Herb House, Bessemer, Ala. Shipped March 30, 1942. Composition: essentially dry ground mustard and ground black pepper. Misbranded because name falsely suggested usefulness for asthma.—[*D. D. N. J., F. D. C. 1043; March 1945.*]

Manning (D. R.) Antiseptic Douche Powder.—Manning Herb House, Bessemer, Ala. Shipped March 30, 1942. Composition: essentially 4 parts of boric acid to 1 of oxyquinoline sulfate. Misbranded because falsely represented that when diluted according to directions it was an antiseptic and efficacious as a douche for feminine hygiene.—[*D. D. N. J., F. D. C. 1043; March 1945.*]

Manning (D. R.) Asthma Salve.—Manning Herb House, Bessemer, Ala. Shipped March 30, 1942. Composition: essentially petrolatum, with a small amount of volatile oils, including menthol, eucalyptol and camphor. Misbranded because falsely represented on label as efficacious for head colds, headache, catarrh, hay fever, asthma and sinus disorders.—[*D. D. N. J., F. D. C. 1043; March 1945.*]

Manning (D. R.) Throat Gargle.—Manning Herb House, Bessemer, Ala. Shipped March 30, 1942. Composition: essentially plant material, probably of citrus and pineapple origin, and water, preserved with sodium benzoate. Misbranded because label falsely represented that product was an adequate treatment for sore, inflamed or hoarse throat and would remove goiter.—[*D. D. N. J., F. D. C. 1043; March 1945.*]

Manning's Princess Gaynell Hair Tonic. — Manning Herb House, Bessemer, Ala. Shipped March 30, 1942. Composition: a small amount of plant debris, with odor of cardamom or lavender. Misbranded because label falsely represented that product was a food or fertilizer for the hair, would feed the roots and act as a tonic for the hair.—[D. D. N. J., *F. D. C. 1043; March 1945.*]

Nakamo Bell Tablets. — Hollings-Smith Company, Orangeburg, N. Y. Shipped Nov. 20, 1942. Composition: in each tablet essentially 2 grains of ammonium chloride, 3 grains of sodium chloride and 1 grain of potassium chloride. Misbranded because label falsely represented efficacy of product in treating hay fever, sinusitis, asthma and colds.—[*D. D. N. J., F. D. C. 1045; March 1945.*]

Pantabee. — Charles C. Haskell & Company, Inc., Richmond, Va. Shipped Jan. 13, 1943. Composition: not more than 250 International units of vitamin B_1 per capsule, whereas strength was given as 333 International units on label. Hence adulterated and misbranded.—[*D. D. N. J., F. D. C. 1027; March 1945.*] Also adulterated and misbranded under provisions of the law applicable to foods, as reported in *F. N. J. 5774.*

Py-Ro.—Oran Products, New York. Shipped April 3, 1943. Composition: essentially sodium hypochlorite, chlorthymol, and oil of peppermint dissolved in water. Misbranded because name and label suggestions falsely represented the product as an effective treatment for pyorrhea and trench mouth.—[*D. D. N. J., F. D. C. 1089; April 1945.*]

Rheumatox.—Rheumatox Company, Cleveland. Shipped April 20 and July 15, 1942. Composition: essentially an aqueous solution of sodium salicylate, methenamine, potassium citrate, potassium iodide, emodin-bearing drugs, and a small amount of alcohol. Misbranded because name of product and firm would give erroneous impression that Rheumatox would cure, prevent or mitigate rheumatism; because label falsely represented that excess uric acid commonly causes arthritis, neuritis, lumbago, sciatica, rheumatic pains and gout, and that Rheumatox would prevent or cure these conditions, and because label failed to declare presence of potassium iodide, an active ingredient.—[*D. D. N. J., F. D. C. 1044; March 1945.*]

Sun-Glow Cod Liver Oil Concentrate Tablets.—Brewer & Company, Inc., Worcester, Mass Shipped July 15, 1941. Misbranded because labeling misstated content of vitamins A and D and falsely represented product as efficacious in preventing and treating disease by increasing general resistance, toning the system and developing strong bones and good teeth. —[*D. D. N. J., F. D. C. 1013; March 1945.*] Also adulterated and misbranded under provisions of the law applicable to foods, as reported in *F. N. J. 6597.*

Swiftide Brand Cod Liver Oil.—Swiftide Company, Portland, Maine. Shipped Feb. 7 and April 4, 1942. Adulterated and misbranded because quality fell below standard set for cod liver oil by the United States Pharmacopeia.—[*D. D. N. J., F. D. C. 1015; March 1945.*]

Vigor 8.—Royal Products Company, Chicago. Shipped March 23, 1944. Composition: dried brewers' yeast, corn flour, and corn and wheat germs. Misbranded because labels, as well as "Charles D. Kasher's Health and Beauty Chart" which accompanied product, falsely represented that article was of significant nutritional value in that it contained factors of brewers' yeast, and the elements potassium, sulfur, sodium, magnesium, copper, zinc, chlorine and manganese, and that use of Vigor 8 would prevent or correct many disorders, such as cold infection, ulceration, stone formation, cystitis, paralysis, cataract, scurvy and diabetes.—[*D. D. N. J., F. D. C. 1078; April 1945.*] Also declared misbranded under provisions of the law applicable to foods, as reported in *F. N. J. 6591.*

Whoa Liniment. — Manning Herb House, Bessemer, Ala. Shipped March 30, 1942. Composition: essentially an inflammable hydrocarbon capable of ignition with red hot metal, and containing mustard oil and camphor. Misbranded because falsely represented as an adequate treatment for arthritis, lumbago, sciatica and kindred disorders.—[*D. D. N. J., F. D. C. 1043; March 1945.*]

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Failure to Remove Gauze Packing From Antrum.—The plaintiff sought to recover damages for the loss of an eye, alleged to have been caused by the defendant's failure to remove a piece of gauze packing from the plaintiff's antrum for approximately five months after a surgical operation. The jury returned a verdict of $20,000, it being specified that $10,000 was "for loss of sight of her eye." The court entered judgment for the plaintiff for $10,000, it being of the opinion that there was no evidence that the alleged negligence was the proximate cause of the loss of the eye. Both parties appealed to the Supreme Court of Oregon.

In July 1940 the plaintiff consulted the defendant, a surgeon of some thirty-five years' experience, relative to a growth or cyst on the inside of her nose which x-ray pictures showed to be a tumor of the antrum. Surgery was recommended and an operation performed in October 1940. During the operation a specimen of tissue was submitted to Dr. Robertson, a pathologist, and his report showed that the plaintiff had a basal cell type of cancer—i. e., a low grade cancer which had invaded the bone or roof of the antrum. The cancer was removed and, in view of the pathologic report, the operation was more extensive than had been anticipated, it being necessary to remove much of the channel bone between the antrum and the nose and some of the bone constituting the roof of the antrum, which is also the floor of the orbital cavity. The defendant testified in effect that, since the cancerous cells were ascending in the bone of the antrum, he removed some of the bone but did not go into the orbital cavity on account of the serious consequences to the eye and cheek bone. Later it was decided to use radium to kill the remainder of the cancer cells. Defendant admitted having used gauze packing in the operation but asserted positively that it was removed when the operation was completed. He was corroborated in this respect by other witnesses who assisted him.

Subsequently Dr. Wight, a specialist in radium therapy, inserted a 0.50 milligram radium capsule in plaintiff's antrum and left it there for a period of forty-eight hours. Dr. Wight testified that, when this treatment was completed, the capsule and gauze packing surrounding the same were removed in the presence of the defendant and that the antrum was then free of any gauze packing. Dr. Wight explained the nature of radium therapy and stated that its rays would kill not only cancer cells but also other cells and tissue within a certain radius. It was his opinion that the radium treatment would not only damage the bone of the orbital cavity but would probably result in the loss of the eye. The testimony shows that cancer of the antrum is rare and the rate of mortality in such cases is extremely high. Therefore it is fair to assume that the defendant and his assistants were primarily concerned with curing the cancer, since, if the cancer was not cured, the loss of the eye would be of secondary importance. For the few months following the radium treatment the plaintiff was in and out of the hospital, her condition becoming progressively worse. The antrum was irrigated and treated by x-ray. The eye was in a serious condition at this time, necrosis of the bone having progressed rapidly, and there was a profusion of foul pus. The defendant said that he may have used gauze packing during this period of treatment to aid in drainage of the pus.

After leaving the hospital, plaintiff called regularly at the office of Dr. Fenton, an eye, ear, nose and throat specialist, for treatment of her eye. On March 1 Dr. Fenton looked into the antrum, which is about the size of a large walnut, "to see whether there were any fragments of bone which might be loose" as a result of the radium treatment and then discovered a piece of gauze packing ½ inch wide and 4 or 5 inches long. It was "wadded up pretty solid, because it was packed in there tight" and was covered with pus having a "terrible odor." The defendant had not informed him about the gauze packing and he was very much surprised to find it. The plaintiff desired the piece of gauze to show Dr. Pettit but "Dr. Fenton very properly ordered it destroyed." Plaintiff said that, after the gauze was removed, she was able to breathe again through the left nostril. Dr. Fenton, in response to a hypothetical question, testified that it was not proper practice thus to leave a piece of gauze packing in the operative area for a period of five months "or thereabouts." On March 5 Dr. Fenton removed plaintiff's left eye. He said that at that time "there was no cancer, it had all been killed." It was his opinion that the loss of the eye was caused by the radium and not by the infection resulting from the gauze packing. This conclusion as to the cause of the loss of the eye was supported by all the other medical experts, with the exception of one who testified on behalf of the plaintiff.

The only expert witness who testified on behalf of the plaintiff was a Dr. Nelson, who examined the plaintiff in the latter part of March in order to qualify as an expert witness. He testified, among other things, "I don't believe there ever was a cancer there" and that he did not believe in radium or x-ray therapy for treatment of cancer, although he confessed to never having used the same in his practice. On direct examination, in response to a hypothetical question, Dr. Nelson stated positively that the gauze packing was the cause of the loss of the eye and that radium had nothing to do with it. On cross examination, however, he testified, in answer to a question as to what damage would the radium do, "Well it would destroy the eye in that condition—in that place."

Has it been established with reasonable certainty that leaving the gauze packing in the plaintiff's antrum was the cause of the loss of her eye, the Supreme Court asked, or was such damage caused by the radium treatment? The evidence viewed in the light most favorable to plaintiff is that the loss of the eye might, with equal probability, be caused by either the gauze or the radium. The testimony of Dr. Nelson concedes that such is true and the evidence on behalf of the defendant is that the gauze had nothing whatever to do with such damage. Under that state of the record the jury was left only to speculate as to that phase of the case. The Supreme Court therefore concluded that the plaintiff was not entitled to the award of $10,000 for loss of the eye and that the trial court was right in eliminating such sum from the judgment. Accordingly the judgment in favor of the plaintiff for $10,000 was affirmed.—*Parker v. Pettit, 138 P. (2d) 592 (Ore., 1943)*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, Nov. 30, page 810.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Part II.* Dec. 16-17. *Part III.* Boston, Chicago, Jan. 9-11. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral.* Los Angeles, 2d week in April. Sec., Dr. P. M. Wood, 745 Fifth Ave., New York.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written. Oral.* Chicago, Feb. 12-14. Final date for filing application is Jan. 1, 1947. March 17. Asst. Sec., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY. Examination to be given during the Summer. Applications for examination will be accepted until Feb. 15. Sec., Dr. P. C. Bucy, 912 S. Wood St., Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Part II.* Pittsburgh. June 1-7. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OPHTHALMOLOGY: *Oral. All Groups. Parts I and II.* Dec. 1. Chicago. [illegible] date for filing application is March 1. Sec., Dr. S. J. [illegible], Cape Cottage, Me.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral.* St. Louis, Dec. 15 and April 16-19. Sec., Dr. D. M. Lierle, University Hospitals, Iowa City, Ia.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Alabama State Medical Assn. Journal, Montgomery

16:69-104 (Aug.) 1946

Psychoneuroses and World War II. W. S. Littlejohn.—p. 69.
Development of Army Medical Department: Short Sketch. H. P. Sawyer.—p. 73.
Some Common Urologic Complications Following Abdominal Surgery. J. H. Goode.—p. 85.

16:105-128 (Sept.) 1946

Clinical Importance of Congenital Anomalies of Urinary Tract. E. Burns.—p. 105.
Headaches Associated with Injuries of Cervical Spine: Preliminary Report. S. C. Little.—p. 110.
Pediatric Problems in General Practice. W. A. Daniel Jr.—p. 114.

American Journal of Diseases of Children, Chicago

72:137-250 (Aug.) 1946

Estivoautumnal (Plasmodium Falciparum) Malaria: Survey of 493 Cases of Infection with Plasmodium Falciparum in Children. N. H. Einhorn and W. J. Tomlinson.—p. 137.
*Clinical Ascariasis: Analysis of 202 Cases. J. C. Swartzwelder.—p. 172.
*Human Infections with Salmonella Panama. R. H. High and E. H. Spaulding.—p. 181.
Causes of Prematurity: VIII. Influence of Infections, Chronic Disorders and Accidents on Incidence of Prematurity. Estelle W. Brown, R. A. Lyon and Nina A. Anderson.—p. 189.

Clinical Ascariasis.—Swartzwelder states that of 11,000 stools of clinic and hospitalized patients at the Charity Hospital in New Orleans examined by his associates and himself 426 were found to contain ova of Ascaris lumbricoides. He presents an analysis of the clinical and laboratory data from the case records of 202 persons with clinically evident A. lumbricoides infection admitted to the Charity Hospital of Louisiana during a period of about a decade. The age of 170 patients was under 16 years and of 15 patients over 30. The most common symptoms were abdominal pain or discomfort, passing of ascarids by the anus, the mouth or the nose, vomiting, abdominal or epigastric tenderness, fever, constipation, abdominal distention, cough or cold, nausea, headache and diarrhea. Convulsions, abnormal pulmonary conditions, anorexia, loss of weight, weakness, malaise, restlessness, abdominal rigidity, palpable abdominal masses, dyspepsia and dyspnea ranked next in order of frequency. Abdominal pain was frequently sudden in onset and recurrent in nature. In 18 cases the diagnosis was intestinal obstruction due to A. lumbricoides. In 16 cases the obstruction occurred prior to anthelmintic treatment. In 2 cases the obstruction occurred following treatment with santonin or with carbon tetrachloride. In both cases the termination was fatal. No posttreatment obstruction resulted in any of the cases treated with hexylresorcinol or with oil of chenopodium U. S. P. Six cases of intestinal obstruction were fatal. The most frequent tentative diagnoses included intestinal parasites (helminthiases), ascaris infection, chronic recurrent appendicitis, infection of the upper respiratory tract, gastroenteritis, tuberculosis, intestinal obstruction, subacute appendicitis, epilepsy, intussusception and intestinal intoxication. In over half of the cases in which differential leukocyte counts were done there was an eosinophil count of less than 3 per cent. The maximum eosinophil count was 28 per cent.

Human Infections with Salmonella Panama.—High and Spaulding report 3 cases of human Salmonella panama infections and suggest that S. panama is not primarily an animal pathogen, which is the generally accepted view, but essentially a human parasite. The first of the 3 cases was one of mild gastroenteritis in an adult; the second, one of meningitis successfully treated with sulfadiazine in an infant; the third, one of fatal Salmonella septicemia in a newborn infant. S. panama should be considered as primarily a "human" type of Salmonella the transmission of which is predominantly from man to man rather than from animal to man.

American Journal of Medicine, New York

1:213-314 (Sept.) 1946

*Anticonvulsant Properties of Tridione: Laboratory and Clinical Investigations. L. S. Goodman, J. E. P. Toman and E. A. Swinyard, with technical assistance of Corinne Manuel, M. Merkin and Mary Murata.—p. 213.
*Effects of Total Pancreatectomy in Patient with Diabetes. H. T. Ricketts, A. Brunschwig and Kathryn Knowlton.—p. 229.
Clearance of Inulin, Diodrast, Chloride and Phosphate Under Mercurial Diuresis. Intensive Study of Patient in Severe Cardiac Failure. Edith B. Farnsworth.—p. 246.
Chrysotherapy in Rheumatoid Arthritis: Three Year Study of 142 Cases. C. Ragan and T. L. Tyson.—p. 252.
Diagnosis and Treatment of Diseases of Anorectum. H. E. Bacon, J. P. Fleming, C. H. Smith and others.—p. 257.
Penicillin Aerosol and Negative Pressure in Treatment of Sinusitis. A. L. Barach, B. Garthwaite, C. Rule and others.—p. 268.
Isolation of Virulent Treponema Pallidum from Human Aorta Thirty-Two Hours After Death from Cardiovascular Syphilis. C. K. Hu, Y. Liu, K. C. Chen and C. N. Frazier.—p. 301.

Anticonvulsant Properties of Tridione.—Tridione has been made available as a symptomatic therapy for petit mal epilepsy. Goodman and his associates compared the anticonvulsant properties of tridione in animals with those of diphenylhydantoin and phenobarbital by six different laboratory technics. Of all the results obtained, the antagonism to metrazol is the property which most sharply distinguishes tridione from both diphenylhydantoin and phenobarbital. Of particular significance in relation to the known specificity of tridione against petit mal is its ability to abolish the petit mal-like electroencephalographic dysrhythmia produced in animals by metrazol. On the basis of electroencephalographic and clinical study of a selected group of patients with slow wave dysrhythmias, recommendations have been advanced for the clinical use of tridione alone or in combination with other drugs. A sharp rise in seizure rate may be observed in petit mal patients during the first twenty-four hours of tridione therapy. This transient exacerbation is not a contraindication to the drug and may be followed by complete clinical remission. Although freedom from seizures may continue for weeks after discontinuation of tridione, withdrawal should not be attempted until the patient has been seizure free for many months. Abrupt cessation of tridione medication does not entail the danger of "status epilepticus." Drug treatment for associated grand mal should not be stopped when tridione therapy for petit mal is initiated. If psychomotor electroencephalographic dysrhythmia is associated with a petit mal history, diphenylhydantoin combined with tridione is probably the treatment of choice. An occasional patient may respond well to tridione alone. Preliminary electroencephalographic examination provides a sounder basis than clinical history of seizure type for deciding whether tridione should be used alone or in combination with other agents.

Total Pancreatectomy.—Ricketts and his associates report physiologic and metabolic studies on a man who had undergone pancreatectomy, the completeness of which was established at necropsy. The pancreatectomy was done for carcinoma when the patient was already diabetic and had chronic diarrhea. The stomach, duodenum, spleen and left adrenal also were removed. For approximately three months the patient remained in sufficiently good condition to permit metabolic studies. Loss of the pancreas led to an increase in diarrhea, even though the patient was receiving powdered pancreas in large amounts. Intestinal absorption of both fat and protein, already less than normal before operation, was strikingly diminished thereafter. The large loss of nitrogen in the feces was accompanied with a relatively low urinary loss. Analyses of food and excreta showed a slightly positive calcium and phosphorus balance, despite the severe diarrhea. Extirpation of the pancreas was not followed by any increase in the requirement for insulin, which, with a diet containing 400 Gm. of carbohydrate, averaged about 40 units per day. Sensitivity to insulin was great, the patient experiencing frequent hypoglycemic reactions. When the patient was maintained on three injections of crystalline insulin per day, the last dose being given before supper, the fasting blood sugars were essentially normal. This is contrary to the usual finding in severe, spontaneous diabetes. Also at variance with the behavior of such patients was the response in the present case to intravenously administered glucose, the resultant blood sugar curves being less "diabetic" than might be expected. The authors think that the considerable loss of nutriment through diarrhea may explain certain apparent differences between the diabetes in this case and the spontaneous disease of ordinary diabetic patients.

American J. Orthodontics and Oral Surgery, St. Louis

32:525-596 (Sept.) 1946

Army Institute of Pathology and Registry of Dental and Oral Pathology. H. A. Swanson.—p. 526.

Evaluation of Biopsy as Diagnostic Aid. J. L. Bernier.—p. 531.

Histogenesis of Cementoma: Report of 15 Cases. J. L. Bernier and H. C. Thompson.—p. 543.

Invasion of Paranasal Sinuses by Tumors of Meningeal Origin. W. W. Hurteau.—p. 556.

Eosinophilic Granuloma of Bone with Primary Oral Manifestations: Report of 3 Cases. M. E. Cox.—p. 569.

*Fibrous Dysplasia (Ossifying Fibroma) of Maxilla and Mandible. H. G. Schlumberger.—p. 579.

Intracranial Epidermoids (Cholesteatomas). W. A. Bennett.—p. 588.

Fibrous Dysplasia of Maxilla and Mandible.—Schlumberger reports 12 cases of fibrous dysplasia (so-called ossifying fibroma) of the maxilla and the mandible in members of the army whose average age was 26 years. Only 1 patient, a 15 year old boy, was a civilian dependent. The maxilla was involved seven times and the mandible four times in the 11 cases of this series in which the bone lesion was solitary. In the single polyostotic case the mandible was the only bone of the skull affected. Curettement or attempted excision of the lesion was the only therapy employed in these cases. Biopsy revealed partially calcified trabeculae of bone arising by direct metaplasia within a connective tissue stroma; these were indistinguishable in their structure and arrangement from fibrous dysplasia occurring in other bones, e. g. the ribs. The arrangement of the new bone in the form of spherules and the presence of nonossified deposits of calcium were frequently observed in these cases but were also found in lesions of the ribs and long bones in cases with a definite diagnosis of fibrous dysplasia reported by other authors. Since microscopic criteria do not exist by which fibrous dysplasia of the maxilla or mandible can be distinguished from so-called ossifying fibroma of these bones and because their clinical behavior is identical, it is concluded that the ossifying fibroma is a variant of monostotic fibrous dysplasia.

American Journal of Psychiatry, New York

103:1-144 (July) 1946

Psychotherapeutic Aspects of Symptomatic Treatment. J. D. Frank.—p. 21.

Role of Conditioned Responses in Emotional Disturbances of War. N. Bromberg.—p. 26.

Rapid Personality Evaluation Based on Minnesota Multiphasic Personality Inventory and Cornell Selectee Index. H. Grant.—p. 33.

Psychosomatic Dermatologic Syndromes in Military Service: Observation of 26 Cases. D. J. Sullivan and E. S. Bereston.—p. 42.

Why 2,276 American Soldiers in Mediterranean Theater of Operation Were Absent Without Leave, Deserted or Misbehaved Before the Enemy. M. P. Manson and H. M. Grayson.—p. 50.

Residuals of Combat Induced Anxiety. C. O. Sturdevant.—p. 55.

On Oriental Stoicism. J. C. Moloney.—p. 60.

Psychologist's Contribution to Psychiatric Hospital. C. O. Cheney and E. I. Strongin.—p. 65.

Physical Signs in Schizophrenia. T. Klingmann.—p. 69.

Cerebral Lesion Resulting in Spatial Disorientation. A. Z. Pfeffer, E. D. Friedman and S. B. Wortis.—p. 72.

Conditioned Response to Fellatio. A. C. Cornsweet and M. F. Hayes.—p. 76.

Selectee and His Complaints. W. Rottersman.—p. 79.

Psychoneurotics in Combat. M. R. Plesset.—p. 87.

Report on Use of Wechsler-Bellevue Scales in Overseas General Hospital. M. I. Teicher and E. Singer.—p. 91.

Autofellatio: Report of Case. M. M. Kessler and G. E. Poucher.—p. 94.

Personal Problems Related to Army Rank. J. D. Frank.—p. 97.

Psychopathic Personality: Rorschach Patterns of 28 Cases. K. D. Heuser.—p. 105.

Veteran Uses General Semantics for Rehabilitation. By the Veteran.—p. 113.

American Journal of Surgery, New York

72:289-496 (Sept.) 1946

Shock of Battle Wounds: Review of Treatment in 2,000 Casualties. R. Birchall.—p. 291.

*Review of Blood Donor Service of American Red Cross. W. Thalhimer and L. H. Tisdall.—p. 300.

Use of Blood and Plasma in Treatment of Battle Casualties. C. P. Emerson Jr.—p. 307.

Penicillin and Its Use in the War Wounded. C. Lyons.—p. 315.

Function of Thoracic Surgery Centers in World War II. D. B. Effler and B. Blades.—p. 319.

Surgical Management of War Wounds of Abdomen. J. M. Snyder.—p. 331.

Perforating Wounds of Colon and Rectum. B. P. Colcock.—p. 343.

Rehabilitation of Injured Hand. S. B. Hardy.—p. 352.

*Bone Surgery of Hand. S. T. Snedecor.—p. 363.

Repair of Avulsion Wounds of Hands and Feet by Flap Graft Technic. L. R. Rubin.—p. 373.

Splints and Casts in Treatment of War Injuries. M. Bosworth.—p. 385.

Fractures of Upper Extremity: Review of Experiences in World War II. W. T. Fitts Jr.—p. 393.

Rehabilitation of Surgical Patient in Army Hospitals in World War II. A. Thorndike.—p. 404.

Fractures and Dislocations of Spine in Warfare. J. T. Daniels.—p. 414.

Acute War Wounds of Spinal Cord: Analysis of 184 Cases. W. G. Haynes.—p. 424.

Management of War Wounds of Cranial Cavity. R. A. Groff.—p. 434.

Penetrating Wounds of Brain: Management in Evacuation Hospital. E. W. Shearburn and E. H. Mulford.—p. 441

Surgical Problems in Late Management of Craniocerebral Injuries, with Special Reference to Repair of Cranial Defects with Tantalum Plate: Analysis of 170 Cases. I. J. Speigel.—p. 448.

Painful Injuries of Nerves and Their Surgical Treatment. J. C. White.—p. 468.

Repair of Peripheral Nerve Lesions. T. I. Hoen.—p. 489.

Blood Donor Service of American Red Cross.—Thalhimer and Tisdall state that donations of 13,326,242 pints of blood were made by approximately 6,660,000 voluntary donors from Feb. 4, 1941 through August 1945. Donors averaged two donations. The American Red Cross Blood Donor Service was inaugurated at the request of the Army and Navy. The National Research Council assumed responsibility for endorsing all technical and scientific procedures and the Red Cross all other responsibilities. An ample supply of plasma was distributed to our forces all over the globe, to all ships, airports, hospitals and even to front lines and invasion beaches. Methods were developed for fractionating plasma, which proved useful for many purposes. When it was recognized that adequate treatment of hemorrhage and shock due to hemorrhage required immediate transfusion of whole blood, a project for the procurement of whole blood in the continental United States and its shipment to the various combat zones was jointly undertaken by the Army and Navy in cooperation with the Red Cross Blood Donor Service. On the basis of official reports, eye witness accounts and the related experiences of hundreds of army and navy physicians, it may be stated that the results of the use of whole blood shipped from the United States were most beneficial and that the reaction rate at least approximated the rates prevailing in the best civilian hospitals in this country. Some 380,000 pints of whole blood was procured, processed and shipped, with excellent results.

Bone Surgery of Hand.—Snedecor presents various types of bone surgery which have accomplished an improvement of function in severely deranged hands. Bone grafts have been used to form a first metacarpal, to make a bone block between the first and second metacarpals, and in many varied forms to make up loss of bone substance in metacarpals. A metatarsal head with its cartilaginous covering was successfully transplanted onto a metacarpal shaft to form a new metacarpophalangeal joint. Malunion of metacarpals often required correction by osteotomies to realine the metacarpal heads and restore the intrinsic muscle function. Rotation osteotomies were also useful to correct malunion of both metacarpals and the phalanges. Closing in of the hand by metacarpal shifts onto the bases of their vacant neighbors was discovered to be an advantageous procedure under proper indications. Simple arthroplasties of the metacarpophalangeal joints were practical and reasonably successful. Failures of union have been observed almost not at all either after osteotomies or after bone grafts.

Am. J. Syphilis, Gonorrhea and Ven. Dis., St. Louis

30:405-512 (Sept.) 1946

Penicillin in Treatment of Neurosyphilis: I. Asymptomatic Neurosyphilis. J. E. Moore and C. F. Mohr.—p. 405.
Systemic Treatment of 227 Cases of Arsenic Poisoning (Encephalitis, Dermatitis, Blood Dyscrasias, Jaundice, Fever) with 2,3-Dimercaptopropanol (BAL). H. Eagle and H. J. Magnuson.—p. 420.
Studies on Biologic Relationship Between Causative Agents of Syphilis, Yaws and Venereal Spirochetosis of Rabbits: I. Observations on Treponema Cuniculi Infection in Rabbits. Charlotte McLeod and T. B. Turner.—p. 442.
Id.: II. Comparison of Experimental Disease Produced in Rabbits. Charlotte McLeod and T. B. Turner.—p. 455.
*Syphilitic Nephrosis as Manifestation of Renal Herxheimer Reaction Following Penicillin Therapy for Early Syphilis: Case Report. V. Scott and E. G. Clark.—p. 463.
Therapeutic Effectiveness of Relatively Crude Commercial Penicillin in Early and Late Rabbit Syphilis. W. L. Fleming and Mary H. Wolf. —p. 468.
Rapid Treatment of Early Syphilis with Combined Use of Penicillin and Mapharsen. H. N. Bundesen, R. M. Craig, G. X. Schwemlein, R. L. Barton and T. J. Bauer.—p. 475.
Penicillin by Mouth in Treatment of Late Cutaneous Syphilis: Report of Case. Evelyn Wallace and W. D. Paul.—p. 480.
Oral Penicillin Treatment of Gonorrhea. A. Cohn, B. A. Kornblith and I. Grunstein.—p. 485.
Value of Quantitatively Standardized Complement Fixation Test in Diagnosis and Treatment of Early Syphilis. E. R. Maillard and Anne Orzel.—p. 490.
Surgical Treatment of Inguinal Lymphogranuloma Venereum: Analysis of 613 Cases in Male. H. A. Tucker.—p. 495.

Nephrosis Following Penicillin Therapy of Syphilis.—Scott and Clark report a case of secondary syphilis in a man aged 31 in which the classic nephrotic syndrome developed and which spontaneously and rapidly subsided without further antisyphilitic treatment following penicillin therapy. Treatment had been accompanied with a severe febrile Herxheimer reaction. This case demonstrates that subclinical involvement of the kidney may exist in early syphilis and that a focal Herxheimer reaction affecting a subclinically involved renal parenchyma may produce the nephrotic syndrome (syphilitic nephrosis).

Annals of Surgery, Philadelphia

124:161-478 (Aug.) 1946. **Partial Index**

Experience with Curare in Anesthesia. Virginia Apgar.—p. 161.
*Thiouracil in Treatment of Thyrotoxicosis: Experience of Thyroid Clinic of Columbia-Presbyterian Medical Center. H. Aranow Jr., R. H. E. Elliott Jr., Virginia Kneeland Frantz, G. W. Melcher Jr. and S. C. Werner.—p. 167.
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Granular Cell Myoblastoma of Mammary Gland. C. D. Haagensen and A. P. Stout.—p. 218.
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*Prevention of Wound Infection by Injection of Nontoxic Antibacterial Substances. E. L. Howes.—p. 268.
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Report on Trench Foot and Cold Injuries in European Theater of Operations. O. C. Leigh.—p. 301.
*Importance of Whole Blood Transfusions in Management of Severe Burns. J. J. McDonald, E. F. Cadman and J. Scudder.—p. 332.

Thiouracil Thyrotoxicosis.—Aranow and his associates review observations on thiouracil treatment of 77 cases of primary toxic goiter, 30 cases of recurrent toxic goiter and 47 cases in which thyroidectomy was done. They found that the incidence of "permanent" remissions obtained in primary thyrotoxicosis by the use of thiouracil is so small that they do not advocate it as the sole therapeutic agent. Prolonged treatment with thiouracil in primary thyrotoxicosis should probably be reserved for the categories of cases in which (1) operation has been refused, has been ineffective or is inadvisable, (2) malignant exophthalmos is feared, (3) the adolescent age group is involved or (4) roentgenotherapy has been administered without benefit and operation is not feasible. As a preparation for operation the use of iodine alone is advocated for the average case of toxic goiter because of the present incidence of toxic reactions with thiouracil and the length of time required for preparation with this drug. Thiouracil can be used to advantage as preparation for operation in the poor risk cases such as the thyrocardiac or those in which thyrotoxicosis is extreme and iodine is not tolerated or prolonged preoperative treatment is required. Thiouracil therapy is promising in a selected group of cases with recurrence of symptoms after operation. The permanent remissions in thiouracil treatment of recurrent toxic goiter are few but the drug does offer a means of control of hyperactivity over long periods.

Prevention of Wound Infection by Antibacterial Substances.—Howes says that a mixture of 200 units of streptomycin per cubic centimeter and 5 per cent of sulfamylon (4-amino-2-methyl benzene sulfonamide hydrochloride) was demonstrated as being capable of killing a three hour growth of bacteria on a blood agar plate. This combination of streptomycin and sulfamylon was demonstrated to be innocuous to tissues. It was suggested that the mixture of streptomycin and sulfamylon should be an ideal subcutaneous antiseptic. It was used in 30 clinical cases without untoward effects and without infection. The author made studies on animals. A defect 3 cm. square was cut in the skin of the back of the rabbit just lateral to the spinal column. The loose subcutaneous tissue and fascia were excised and the underlying muscle was vigorously crushed with a Kocher clamp. The wound was then contaminated with bacteria, either floor dirt or a twenty-four hour growth of a specific bacterium being used. The wound was then treated with the combination of streptomycin and sulfamylon. Infection was prevented when treatment was carried out immediately after infliction and contamination of the wound, but it failed to prevent infection in wounds treated three hours after infliction and contamination. The inclusion of the bacteria within leukocytes is offered as a possible explanation for the protection of the bacteria against the action of the antibacterials after three hours. Failing to penetrate to the bacteria within the leukocyte, the cell may subsequently die and liberate them unharmed to recontaminate the wound. Repeated injections and washing of the wound with an established localized infection did not hasten resolution of the suppuration. The author stresses that, if this combination of antibacterial substances is used clinically to prevent infection in wounds, the principles of good surgery should not be neglected. Use should be limited to contaminated wounds relatively free of traumatized tissue and foreign bodies. Other antibacterials can be substituted for the sulfamylon and streptomycin if they kill bacteria quickly in the presence of blood, have a wide range of activity, do not destroy or irritate tissue at the bactericidal concentration and are nontoxic.

Whole Blood Transfusions in Burns.—The 10 patients selected for the present analysis by McDonald and his associates suffered flame burns of from 30 to 80 per cent of their body surfaces and were treated under the direction of various members of the surgical staff of the Presbyterian Hospital, New York. The first 4 patients had overwhelming burns and appeared to have little or no hope of survival but are presented as a comparison of four types of shock therapy. Of the remaining 6 patients 2 died in the postshock phase and 4 survived. The authors conclude that replacement therapy in burn shock should be directed toward the restoration of all deficits in the circulating blood. Whole blood transfusions fulfil these requirements more nearly than any other single agent. Water and electrolytes can be administered to better advantage by mouth than by vein and will be absorbed in adequate amounts provided transfusions also are given. Sodium chloride solution in combination with lactate or bicarbonate is a more rational electrolyte mixture than sodium lactate solution alone in view of the tendency to alkalosis and hypochloremia which may result from vomiting and overalkalization in burn shock. The relative losses in plasma proteins and red cell mass may vary widely and are difficult to estimate during the period of hemoconcentration. In general, plasma losses will predominate in extensive second degree burns, while in third degree burns the red cell mass lost from the circulation may equal or even exceed the losses in plasma volume. During the healing phase of a severe burn whole blood should be administered in amounts adequate to overcorrect the anemia. If this is done the problem of maintaining nitrogen balance will be simplified. In the presence of anemia and hypoproteinemia uncontrolled electrocyte therapy by mouth or by vein is contraindicated since it will increase cellular edema and may lead to fatal pulmonary edema.

Archives of Dermatology and Syphilology, Chicago

54:255-376 (Sept.) 1946

Use of Penicillin in Treatment of Syphilis in Pregnancy. H. N. Cole, S. Ayres, J. H. Barr and others.—p. 255.
Chromoblastomycosis: Report of 2 New Cases Observed in Isthmus of Panama. C. Calero.—p. 265.
Rat Mite Dermatitis: Ascariasis Caused by Tropical Rat Mite, Liponyssus Bacoti Hirst. M. E. Lowell.—p. 278.
Urinary Excretion of Porphyrin in Dermatoses. I. Zeligman.—p. 281.
*Allergic Dermatoses Complicating Penicillin Therapy. G. H. Bauer.—p. 292.
In Vitro Fungistasis by Bacterium (Bacillus Subtilis Var. XG and XY). G. M. Lewis, Mary E. Hopper and Selma Shultz.—p. 300.
Relation of Quinacrine Hydrochloride to Lichenoid Dermatitis (Atypical Lichen Planus). J. M. Bazemore, H. H. Johnson, E. R. Swanson and J. M. Hayman.—p. 308.
Complications of Lichenoid Dermatitis: Glomerulonephritis and Severe Pigmentary Changes in Exfoliative Stage of Lichenoid Dermatitis.—p. 325.
Exfoliative Dermatitis Due to Polyvalent Arsenical Sensitivity: Report of Case. L. J. Underwood.—p. 330.
Cutaneous Leishmaniasis (Oriental Sore): Report of Autochthonous Cases Observed in Haifa. S. Gill.—p. 333.
Dermatitis Due to Quinacrine Hydrochloride. F. T. Becker.—p. 338.

Allergic Dermatoses Complicating Penicillin Therapy.—According to Bauer, the reactions to penicillin are usually of an allergic nature and are then manifested clinically as some type of dermatitis. There are three clinical types of reaction to penicillin: (1) urticaria, (2) the erythematovesicular group of reactions and (3) contact dermatitis. The first two follow only the injection route, while contact dermatitis occurs only after external exposure. Although the exact allergen could not be identified in the 2 cases of contact dermatitis resulting from commercial penicillin sodium, studies indicated that neither crystalline penicillin sodium G nor the penicillin culture medium was responsible. An analysis of cases of the erythematovesicular type of reaction and the results of tests indicate that the mechanisms behind this erythematovesicular reaction and the dermatophytids are similar and may possibly be identical. The diagnostic value of intradermal tests in this group will be greatly increased if they are made in the dermatitic area rather than on the forearms. Cutaneous tests are of only limited value in the diagnosis of the three types of dermatitis discussed in this report. Identification of the exact allergens in these dermatoses must wait until more refined commercial preparations are developed and until the purified penicillin fractions become available for testing.

Archives of Internal Medicine, Chicago

78:125-254 (Aug.) 1946

*Coronary Arteriosclerosis, Coronary Anastomoses and Myocardial Infarction: Clinicopathologic Study Based on Injection Method. A. Ravin and E. F. Geever.—p. 125.
*Fulminating Meningococcic Septicemia Associated with Adrenal Lesions: Analysis and Discussion of 7 Cases. J. M. Kinsman, C. A. D'Alonzo and S. Russi.—p. 139.
Rheumatic Fever in Naval Enlisted Personnel: II. Effectiveness of Intensive Salicylate Therapy in Cases of Acute Infection. R. C. Manchester.—p. 170.
Changes in Hemoglobin and Total Plasma Protein After Injection of Mercurophylline. A. De Vries.—p. 181.
Congenital Dilatation of Pulmonary Arterial Tree: Relation to Ayerza's Disease and Primary Pulmonary Arteriosclerosis. M. M. A. Gold.—p. 197.
Gastroenterology: Review of Literature from July 1944 to June 1945. W. L. Palmer, W. E. Ricketts and S. N. Maimon.—p. 210.

Changes in Coronary Arteries.—According to Ravin and Geever, Schlesinger's method for postmortem study of changes in the coronary arteries has opened a new field in the study of disease of these arteries. The authors examined a series of 166 hearts. In many cases the heart was normal, the cause of death being unrelated to it. The coronary arteries were occluded in 18 hearts. Seven specimens revealed more than one occluded vessel. Thirty-six hearts showed interarterial anastomoses. Anastomoses without occlusion were observed in 21 hearts. Occlusion with infarction occurred in 13 hearts. Occlusion without infarction was encountered in 5 hearts. Infarction without occlusion of the coronary arteries was found in 2 hearts. Some hearts showed uniformly hypoplastic arterial systems. The hypoplasia was considered a factor in the death of 1 patient with arteriosclerosis, thrombosis and subsequent myocardial fibrosis. In 11 patients over 80 years of age 9 hearts showed mild to moderate arteriosclerosis and scattered myocardial fibrosis. The other 2 showed advanced arteriosclerosis, anastomoses, occlusion and infarction. Anomalies of the coronary arteries involved mainly the left circumflex vessel. In 1 case the right coronary artery was absent. There is an important relation between the development of anastomoses and the prognosis and treatment of coronary arteriosclerosis and occlusion.

Meningococcic Septicemia.—Kinsman and his associates report 7 cases of proved fulminating meningococcic septicemia, with recovery in 2. In the beginning the illness was usually diagnosed as an ordinary infection of the respiratory tract. An eruption developed within three to twenty-four hours after the onset. Signs of shock appeared in twelve to twenty-four hours. Symptoms suggesting meningitis were usually present: Five of the 7 patients had pleocytosis; cultures of the spinal fluid of the same 5 patients yielded meningococci. Cultures of the blood of 5 patients were positive for meningococci. Albuminuria and azotemia were the rule. In 3 of the fatal cases adrenal hemorrhage was shown, while in the other 2 there were adrenal changes consisting of zonal degeneration and conspicuous congestion in the inner layers of the cortex, with "tubular changes" in the outer layer. In 1 case there were myocardial changes. It is believed that the cause of the circulatory collapse is the effect of the bacterial poisons on all the tissues of the body. The adrenal glands play only a part. A depletion of vitamin C may be a factor. The theory is advanced that the increased demand on the adrenal glands, as a result of the infection, depletes the cortical cells of their lipoid (hormone-containing) material; the cells degenerate more rapidly than normally, producing the "tubular" pattern in the outer layers and more conspicuous lesions in the inner layers, with eventual lysis of many of the cells before they have reached their usual site of death: this stage is considered reversible. Later, as a result of the loss of support of the sinusoids because of the premature death of the cortical cells, rupture and hemorrhage may occur—an irreversible stage. The patient may die before hemorrhage occurs. The primary aim of treatment is to overcome the infection. In addition to the supportive measures usually advocated, it is suggested that ascorbic acid might be of benefit.

Archives of Neurology and Psychiatry, Chicago

56:245-364 (Sept.) 1946

*Pretraumatic Personality and Psychiatric Sequelae of Head Injury: II. Correlation of Multiple, Specific Factors in Pretraumatic Personality and Psychiatric Reaction to Head Injury, Based on Analysis of 101 Cases. H. L. Kozol.—p. 245.
Effects of Denervation on Fasciculations in Human Muscle: Relation of Fibrillations. F. M. Forster, W. J. Borkowski and B. J. Alpers.—p. 276.
Toxicity of Quinacrine (Atabrine) for Central Nervous System: III. Experimental Study on Human Subjects. T. Lidz and R. L. Kahn.—p. 284.
Ring Scotoma and Tubular Fields: Their Significance in Cases of Head Injury. M. B. Bender and H. L. Teuber.—p. 300.

Sequelae of Head Injury.—Kozol subjected 101 patients with acute head injuries to intensive study of multiple factors in the pretraumatic and the posttraumatic personality status. In a number of patients neurotic symptoms appeared for the first time after head injury. Psychologic changes were most noticeable shortly after discharge from the hospital and were at a maximum three to six weeks after discharge. In general they were receding at the end of three months. Approximately 50 per cent of the patients showed some persistence of symptoms at six months, and approximately 15 per cent had symptoms which persisted a year or longer. The duration of incapacity for work paralleled the persistence of psychologic symptoms. Patients with pretraumatic psychoneurotic personalities showed a greater proportion of posttraumatic psychiatric symptoms than did patients in other groups. There was no close correlation between the severity of the acute injury of the brain and the severity of the sequelae. There was high correlation between the existence of persistent complicating psychosocial factors, such as continuing compensation, pending litigation, occupational stresses and persistent associated bodily injuries, and the severity and persistence of psychiatric sequelae. The psychiatric sequelae were usually the resultant of various factors.

Bulletin of Johns Hopkins Hospital, Baltimore

79:97-206 (Aug.) 1946

Transmission of Primary Atypical Pneumonia to Human Volunteers: I. Experimental Methods. Commission on Acute Respiratory Diseases. —p. 97.
Effect of Method of Administration on Therapeutic Efficacy of Sodium Penicillin in Experimental Syphilis. H. Eagle, H. J. Magnuson and R. Fleischman.—p. 168.
Perfectionism in Medicine. R. Cole.—p. 190.

Bull. of the U. S. Army Med. Dept., Washington, D. C.

6:203-346 (Sept.) 1946

*Healing Time in Peptic Ulcer. G. M. Cummins Jr., M. I. Grossman and A. C. Ivy.—p. 288.
Adenomatosis versus Pseudopolyposis of Large Bowel. S. Z. Hawkes and R. K. Shields.—p. 302.
Diagrammatic Representation of Rh Blood Types. A. S. Wiener. —p. 311.
Army Hospital Ship. J. A. Goodhart.—p. 321.
Psychiatric and Tactical Situations in Armored Division. E. W. Mericle.—p. 325.
Bacteriologic Laboratory in Combat Area. M. Michael Jr.—p. 335.

Healing Time in Peptic Ulcer.—Cummins and his associates found that accurate data are not available on the rate of healing of gastric ulcers, although the healing time of peptic ulcers is important in evaluating new methods of treatment and judging the efficacy of treatment in individual cases. In the 69 cases reviewed, fluoroscopic study and serial roentgenograms were taken on all original and subsequent examinations. All patients were subjected to the same therapeutic regimen. One teaspoon of a mixture of sodium bicarbonate and calcium carbonate in the proportion of 1 to 3 in water was given every two hours from 8 a. m. to 8 p. m. and at night if awakened by distress. The administration of alkalis was continued on this schedule for twenty-eight days; after that time they were given thirty minutes after meals, before retiring and on awakening at night. Half-and-half mixture of milk and cream 6 ounces every two hours from 7 a. m. to 9 p. m. was given for the first twenty-eight days of the regimen, following which the mixture was given between meals and in the evening. Food by mouth was begun on the fourth day by the gradual addition of farina, poached or boiled eggs, toast, puréed vegetables and ground, boiled or broiled beef. The healing time was judged by the time of disappearance of the crater radiologically. The average healing time for duodenal ulcers was thirty-seven days and for gastric ulcers was forty-two days. No correlation was found between the healing time and the size of the crater, age, recurrence or duration of symptoms.

Canadian Medical Association Journal, Montreal

55:199-326 (Sept.) 1946

Early Recognition of Uterine Cancer. W. G. Cosbie.—p. 237.
Observations on Surgical Relief of Pain in Cancer. F. Turnbull.—p. 241.
*Penicillin in Pyoderma. N. M. Wrong.—p. 244.
*Paraplegia Following War. E. H. Botterell, A. T. Jousse, C. Aberhart and J. W. Cluff.—p. 249.
Pruritus Ani. C. M. Gardner.—p. 259.
Ureteritis Cystica and Some Renal Anomalies. H. Ostry.—p. 262.
Nasal Mechanisms: Their Maintenance and Repair. A. W. Proetz. —p. 264.
Pelvic Pain. K. T. MacFarlane.—p. 267.
Chronic or Recurrent Diarrhea. M. Baird.—p. 273.
Amebiasis. J. P. Fletcher, A. A. Dougan and G. K. Sammon.—p. 278.
Significance of Sedimentation Rate to General Practitioner. A. A. Numbers.—p. 284.

Penicillin in Pyoderma.—Wrong has used penicillin extensively in the treatment of pyogenic skin infections for over two years. Bacteriologic studies are important in any investigation of the effect of penicillin in pyoderma. Staphylococcus pyogenes occurs in 90 per cent or more of all skin infections, and the percentage of its penicillin resistant strains is between 5 and 10. Penicillin has proved effective in the treatment of uncomplicated impetigo, ecthyma (the ointment being the method of choice) and erysipelas. Initial results may be good, but relapses are common, with sycosis of the beard, folliculitis, impetigo complicated by an underlying seborrheic dermatitis, otitis externa or sulfonamide dermatitis, and with furunculosis. Penicillin is of little or no value in common acne, rosacea and pyoderma caused by penicillin resistant organisms. The chief complications of penicillin therapy are dermatitis and urticaria. Dermatitis may develop in a few hours, a few days or even a few weeks after application of penicillin to the skin. The dermatitis subsides fairly rapidly with cold boric acid compresses. Benadryl appears to be of real value in controlling urticaria which follows administration of penicillin. The incidence of both complications seems to be increasing. The efficacy of this antibiotic is seriously affected by the complications.

Paraplegia Following War.—Botterell and his associates observed 103 posttraumatic paraplegic patients with stable spinal cord who were returned from overseas and were treated in Toronto at a center fully equipped and specially staffed to deal with all aspects of treatment and retraining during the period of February 1945 to June 1946. Forty-nine patients presented complete injuries of the spinal cord, while 54 had incomplete injuries, particularly in the lumbar and sacral regions. Death occurred in 7 instances and was considered to be due primarily to disturbances of nutrition, with genitourinary sepsis as a contributory factor. The treatment of the paralyzed bladder in these 103 patients, while overseas, consisted in suprapubic cystotomies in 77 and urethral drainage in 17; 9 had but transient retention requiring catheterization on a few occasions. At the center in Canada, tidal drainage remains the treatment of choice. Of the 77 cystotomies 61 have been closed, 24 by operation and 37 healed following institution of urethral drainage by a retention urethral catheter. In patients in whom infection with gram-negative urea splitting organisms was rife, administration of streptomycin was of substantial value and was continued until the suprapubic wound was healed and the urethral catheter removed. Anterior rhizotomy has been performed on 5 patients in whom the mass flexion reflex was disabling, and all have improved substantially. In 16 of 20 patients sacral, trochanteric and ischial pressure sores have been successfully closed with full thickness skin by rotation flaps. Bilateral pain tract section has proved of great value in the treatment of 4 patients with disabling pain who had lesions involving the cauda equina. Retraining commences while the patient is still in bed and gradually progresses. By grasping a bed frame exerciser the patient may be enabled to turn himself independently at two hour intervals by day and by night. Long leg braces of chrome molybdenum have been evolved and are put forward as being particularly suitable for paraplegic patients. Custom made boots of modified hockey cut type, light in weight and particularly flexible, are recommended as a means of preventing pressure sores of the feet.

Cincinnati Journal of Medicine

27:595-674 (Sept.) 1946

Paraplegia Following War. E. H. Botterell, A. T. Jousse, C. Aberhart and J. W. Cluff.—p. 595.
*Relationship of Smoke to Pneumonia and Other Infections of Respiratory System. C. A. Mills.—p. 624.
Steam Locomotive and Atmospheric Pollution. C. A. Mills.—p. 634.

Relationship of Smoke to Pneumonia and Other Respiratory Infections.—Mills points out that certain industrial cities, as a result of their local topographical features, present sharp local differences in the degree of pollution. Cincinnati and Pittsburgh are two such cities. The sootfall in both cities is highest in the low lying areas of the river bottoms. The author cites figures which indicate the close relationship of high pneumonia death rates to heaviest sootfall. Atmospheric pollution with coal combustion products sharply increases the respiratory disease hazards of the inhabitants of an industrial city. Present day pneumonia and tuberculosis statistics in Pittsburgh and Cincinnati, showing death rates which rise sharply with increasing degrees of atmospheric pollution, provide emphatic support for the Ruhr basin findings of Ascher many years ago. Morton, in studying a large series of surgical records, found postoperative pneumonia to be six times more prevalent among patients who had been tobacco smokers up to the time of hospitalization than among nonsmokers. The author concludes that there exists a direct and highly significant relationship between air pollution and infectious diseases of the respiratory tract in man.

Delaware State Medical Journal, Wilmington

18:167-194 (Aug.) 1946

Treatment of Poliomyelitis Under Orthodox, Kenny and Prostigmine Methods. G. J. Boines.—p. 167.

Evaluation of Spinal Fluid Examination in Patients with Poliomyelitis. G. J. Boines and O. J. Pollak.—p. 171.

Interpretation of Semen Studies. O. J. Pollak.—p. 175.

Urologic Observations in European Theater of Operations. N. L. Cannon. —p. 179.

Fetal Blackout. I. Slovin.—p. 183.

Dissecting Aneurysm of Right Colic Artery. O. J. Pollak.—p. 186.

Endocrinology, Springfield, Ill.

39:85-160 (Aug.) 1946

Inhibitors of Hyaluronidase in Blood Serums and Their Effect on Follicle Cell Dispersal. S. L. Leonard and R. Kurzrok.—p. 85.

Effect of Purified Gonadotropes on Androgen-Secreting Ability of Testes of Hypophysectomized Cocks. A. V. Nalbandov, R. K. Meyer and W. H. McShan.—p. 91.

Experimental Production of Menstrual Anomalies. Doris H. Phelps. —p. 105.

Weanling Guinea Pig as Test Object for Estrogen Assays. C. G. Hartman, J. L. Littrell and J. Tom.—p. 120.

Excretion of Urinary Corticoids and 17-Ketosteroids in Normal Individual. Eleanor H. Venning and V. Kazmin.—p. 131.

Disturbance in Iodine Metabolism Produced by Thiocyanate: Mechanism of Its Goitrogenic Action with Radioactive Iodine as Indicator. J. Wolff, I. L. Chaikoff, A. Taurog and L. Rubin.—p. 140.

Influence of Ingested Estrogens on Feed Intake, Metabolic Rate and Lipemia in Male Fowl. S. Bird.—p. 149.

Gastroenterology, Baltimore

7:153-284 (Aug.) 1946

Military Gastroenterology—The Summing Up. D. T. Chamberlin. —p. 162.

*Differential Diagnosis of 207 Hospitalized Cases of Peptic Ulcer. R. C. Kirk.—p. 168.

Correlated Gastroscopic and Psychiatric Studies of Soldiers with Chronic Nonulcerative Dyspepsia. J. A. Halstead, I. R. Schwartz, S. R. Rosen and others—p. 177.

Clinical Findings in American Soldiers Released From German Prison Camp. M. Kraemer.—p. 191.

Gastrointestinal Bleeding in Hereditary Hemorrhagic Telangiectasia: Historical Review and Case Report with Gastroscopic Findings and Rutin Therapy. S. D. Kushlan.—p. 199.

Effects of Beta-Dimethylaminoethyl Benzilate Hydrochloride on Intestinal Activity. K. G. Wakim, C. E. Powell and K. K. Chen.—p. 213.

Effect of Glucose on Motility of Stomach and Small Intestine. E. J. Van Liere, D. W. Northup and J. C. Stickney.—p. 218.

Effect of Pilocarpine on Mucous Secretion by Pyloric Mucosa. J. S. Ivy.—p. 224.

Differential Diagnosis of Peptic Ulcer.—Kirk presents a study that was made at the Station Hospital, Fort Sill, Oklahoma. In a sixteen month period 1,306 enlisted men were admitted to the gastrointestinal section. During this period 207 soldiers were proved to have peptic ulcer. There were 200 with duodenal ulcer and 7 with gastric ulcer, a ratio of 28:1. This report is concerned chiefly with the 200 cases of duodenal ulcer. Midepigastric pain occurring late at night and radiating into the mid back appears diagnostic of active duodenal ulcer. No correlation has been obtained between the gastric analysis and the severity of the ulcer or of the complaints. Free hydrochloric acid was absent in the fasting contents of the stomach in 26 cases and in the test meal contents in 12 cases. An increase in the total count and the percentage of polymorphonuclear cells is strong evidence of a penetrating ulcer. A duodenal ulcer has a 10 per cent chance of producing serious bleeding and a 5 per cent chance of perforating during its course. Alcohol and tobacco are not implicated as etiologic factors in this disease. The x-ray proof of ulcer was present in 100 per cent of this series. Comparing these 200 ulcer patients with 200 others in whom peptic ulcer had been suspected but could not be proved, it was found that the peptic ulcer patients as a whole showed no greater or lesser degree of psychiatric imbalance than patients with organic heart disease, tuberculosis or diabetes; that is, the emotional concept of the genesis of duodenal ulcer could not be proved.

Illinois Medical Journal, Chicago

90:73-144 (Aug.) 1946

Gallbladder and Duct Problem. R. L. Sanders.—p. 111.

Corrective Surgery of External Nasal Pyramid and Nasal Septum for Restoration of Normal Physiology: I. Introduction to Individual Procedures for Surgery of External Nasal Pyramid: II. Surgery of Anterior and Posterior Portions of Nasal Septum: III. Surgery of External Nasal Pyramid Combined with Surgery of Nasal Septum. M. H. Cottle and R. M. Loring.—p. 119.

Antituberculosis Vaccination. I. S. Neiman.—p. 131.

Carcinoma of Male Breast: Report of Case. A. C. Webb and R. C. Stepto.—p. 135.

Journal of Aviation Medicine, St. Paul

17:279-392 (Aug.) 1946

Future of Research in Aviation Medicine. A. C. Ivy.—p. 280.

Studies on Positive Pressure Respiration: I. General Aspects and Types of Pressure Breathing; II. Effects on Respiration and Circulation at Sea Level. A. L. Barach, M. Eckman, E. Ginsburg and others. —p. 290.

Civilian Aviation and Medical Education. R. W. Keeton.—p. 321.

Studies on Altitude Decompression Sickness: I. Symptomatology. J. S. Gray, S. C. F. Mahady, R. L. Masland and H. S. Wigodsky.—p. 333.

Effectiveness of Some Motion Sickness Remedies in Preventing Air Sickness in Air Force Navigation Students. P. K. Smith.—p. 343.

Use of Hyoscine Hydrobromide for Prevention of Airsickness in Flexible Gunnery Students. P. K. Smith.—p. 346.

Device for Demonstrating Effects of Anoxia on Vision. A. Chapanis. —p. 348.

Effect of Pressure Breathing on Circulation at High Altitude as Measured by Ballistocardiograph. N. Molomut and S. C. Allen.—p. 357.

Automatic Rip Cord for High Altitude Bail Out. W. Siri and C. A. Tobias.—p. 364.

Journal of Clin. Endocrinology, Springfield, Ill.

6:535-594 (Aug.) 1946

Clinical Method for Chromatographic-Colorimetric Determination of Urinary 17-Ketosteroids. I. Elisabeth Dingemanse, Leonora G. Huis in't Veld and B. M. DeLaat.—p. 535.

*Testosterone Propionate Therapy in 100 Cases of Angina Pectoris. M. A. Lesser.—p. 549.

Addison's Disease in Infant. J. C. Jaudon.—p. 558.

Metabolic Studies in Children Fed Milk from Cows Receiving Synthetic Thyroprotein. M. Bruger and Flora F. Silberbush.—p. 565.

Therapeutic Use of Testosterone in Aqueous Suspension. S. C. Freed. —p. 571.

Hereditary Exophthalmic Goiter—Report of 11 Cases in One Family. N. F. Boas and W. B. Ober.—p. 575.

Testosterone Propionate in Angina Pectoris.—Lesser treated angina pectoris in 92 men and 8 women with testosterone propionate. Twenty-five mg. of the hormone was administered twice a week for the first two weeks, followed by weekly 25 mg. injections, with an average of twelve injections in the whole series. No untoward effects were observed. Ninety-one of the patients improved for periods of from two to thirty-four months. No appreciable improvement was observed following control injections of plain sesame oil, although the same patients responded when placed on testosterone propionate therapy. Four patients were studied by exercise tolerance tests before and during the course of treatment. In each of these patients the amount of exercise which could be tolerated before the development of an anginal attack was vastly increased under testosterone therapy, and the severity of attacks, as measured by the duration of the pain, was correspondingly diminished. In each case subjective improvement was reported before objective changes could be demonstrated by the test employed.

Journal of Investigative Dermatology, Baltimore

7:153-208 (Aug.) 1946

Tropical Anhidrotic Asthenia (Thermogenic Anhidrosis) and Its Relationship to Prickly Heat. M. B. Sulzberger, H. M. Zimmerman and K. Emerson.—p. 153.

Cytology of Molloscum Contagiosum, with Special Regard to Significance of So-Called "Vacuoles." E. Meirowsky, S. Keys and G. Behr. —p. 165.

Some Newer Bases for Use in Cutaneous Therapy. J. G. Hopkins. —p. 171.

Treatment of Pyodermas with Interface Active Solution of Tyrothricin. G. M. MacKee, Marion B. Sulzberger, Franz Herrmann and Florentine L. Karp.—p. 175.

Biologic Assay of Poison Ivy Extract. J. E. Dunn and Barbara S. Smith.—p. 185.

Preliminary and Short Reports: Effect of Pyribenzamine on Dermographism (Urticaria Factitia). R. L. Baer and M. B. Sulzberger.—p. 201.

Action of Clavacin on Some Dermatophytes: Preliminary Report. J. A. Tolmach and K. Loewenthal.—p. 207.

Journal of Nervous and Mental Disease, New York

104:237-350 (Sept.) 1946

Paroxysmal Slow Waves in Electroencephalograms of Patients with Epilepsy and with Subcortical Lesions. Margaret Lennox and B. S. Brody.—p. 237.
Lückenschädel in Patient with Amnesia Amenable to Hypnotherapy: Personality Study. J. M. Schneck.—p. 249.
*Preliminary Report on Effect of Glutamic Acid Administration in Mentally Retarded Subjects. Kathryn Albert, P. Hoch and H. Waelsch.—p. 263.
Classification of Types of Behavior Noted in General Prisoners. E. H. Malone.—p. 275.
Problems of Military Neuropsychiatry. S. Burack.—p. 284.
Electroshock and Personality Structure. E. P. Mosse.—p. 296.
Concept of Induced Insanity in Family Units. F. J. Kallmann and Jean S. Mickey.—p. 303.

Effect of Glutamic Acid on Mentally Retarded Subjects.—Albert and her associates administered glutamic acid to 8 persons with mental deficiency whose chronologic age ranged from 6 to 26 years and the mental age from 2 to 8 years. The I. Q. varied between 22 and 73. After the I. Q. level was established, the patients were given placebos or glutamic acid. An average of eighteen tablets a day of 0.5 Gm. each were given. A significant rise of mental age was found during the administration of the amino acid. During the successive placebo period the patients' I. Q. dropped back to the level maintained before glutamic acid was given. The authors do not wish to imply that cases of secondary mental deficiency and other forms of feeblemindedness may be cured with glutamic acid; but there is some indication that a limited influence can be demonstrated on some of these patients. Mental defects have been considered unalterable, and treatment has been concentrated on the social and educational aspects. The authors felt that attempts should be made to test the possibility of improving brain function by biochemical means. The results obtained with glutamic acid are considered to be a starting point for further investigations.

Journal of Neurophysiology, Springfield, Ill.

9:349-418 (Sept.) 1946

Presence and Action of Acetylcholine in Experimental Brain Trauma. M. B. Bornstein.—p. 349.
Relation of Electric Potential Changes to Contracture in Skeletal Muscle. S. W. Kuffler.—p. 367.
Righting and Other Postural Activity in Low-Decerebrate and in Spinal Cats After D-Amphetamine. Harriet M. Maling and G. H. Acheson.—p. 379.
Stimulation with Minimum Power. F. Offner.—p. 387.
Responses of Single Human Motor Units to Electrical Stimulation. E. Kugelberg and C. R. Skoglund.—p. 391.
Natural and Artificial Activation of Motor Units—A Comparison. E. Kugelberg and C. R. Skoglund.—p. 399.
Competitive Reinnervation of Rat Muscles by Their Own and Foreign Nerves. P. Weiss and Ann Hoag.—p. 413.

Journal of Nutrition, Philadelphia

32:121-226 (Aug.) 1946. **Partial Index**

*Some Effects of Dietary Oxalate on Teeth of White Rats. R. A. Gortner Jr., C. M. McCay, J. S. Restarski and C. A. Schlack.—p. 121.
Depletion of Hepatic Reserves of Vitamin A and Carotene in Cattle. P. R. Frey and R. Jensen.—p. 133.
Riboflavin Excretions of Young Women on Diets Containing Varying Levels of B Vitamins. Margaret V. Davis, Helen G. Oldham and Lydia J. Roberts.—p. 143.
Isoleucine, Leucine and Valine Requirements of Chick. C. R. Grau and D. W. Peterson.—p. 181.
Pantothenic Acid Content of Blood and Tissues of Chicken as Influenced by Level in Diet. P. B. Pearson, V. H. Melass and R. M. Sherwood.—p. 187.
Effects of High Fat Diet in Temperate Environment. F. C. Consolazio and W. H. Forbes, with technical assistance of S. P. Taylor, J. Poulin, M. Castiglione and J. Stachelek.—p. 195.
Effect of Excess Dietary Calcium on Longevity and Tissue Calcium in Albino Rat. J. B. Shields and H. H. Mitchell.—p. 213.

Dietary Oxalate and Rat's Teeth.—Gortner and his associates demonstrated that ingestion of solutions of various food acids (phosphoric, citric, lactic, sulfuric) caused considerable destruction of rat molars. They found in feeding experiments on young white rats that small amounts of soluble oxalate in the food or drink produced a hard deposit on the teeth of the animals which grossly resembled human dental calculus. The extent of this encrustation, which is presumably calcium oxalate, varied with the concentration of oxalate consumed and with the length of the experiment. Because of this phenomenon, oxalic acid solutions did not etch the enamel of the teeth of rats, in contrast to the action of other common food acids (citric, lactic, phosphoric, sulfuric). When oxalic acid or its sodium salt was present in the rat's food or drink the decalcification of teeth which accompanies ingestion of phosphoric (0.055 per cent) and citric (0.20 per cent) acid solutions diminished or disappeared. Protection against the etching action of orange juice was afforded by a concentration of 0.1 per cent oxalate in the juice.

Journal of Urology, Baltimore

56:151-270 (Aug.) 1946

Study of Experimental Urinary Calculi: III. Persistence of Stone Forming Tendency in Estrogen Treated Male Rats and Its Relation to Diet. J. G. Wilson, Alice D. Leahy and J. A. Benjamin.—p. 151.
Horseshoe Kidney in Pregnancy. R. Bell.—p. 159.
Large Pyelogenic Cyst with Crossed Renal Ectopia. H. H. Lerner and A. I. Gazin.—p. 162.
Pelvic Fused Kidney with Surgical Removal of Calculi: Case. H. R. Newman.—p. 169.
Renal Ectopia: Demonstration of Crossed Unfused Ectopia by Fluoroscopy. B. Resnick and J. H. Clark.—p. 173.
Supernumerary Kidney as Cause of Ureteropelvic Obstruction. H. E. Carlson.—p. 179.
Cavernous Hemangioma: Renal Vascular Tumor Requiring Nephrectomy; an Unusual Entity. W. White and L. E. Braunstein.—p. 183.
Hypernephroma in Polycystic Kidney. W. G. Hayward.—p. 190.
Mammoth Kidney Stone: Case. I. G. Duncan.—p. 193.
Spontaneous Rupture of Urinary Bladder. W. M. Feigal and J. A. Polzak.—p. 196.
Infiltrating Carcinoma of Bladder: Histologic Pattern and Degree of Cellular Differentiation in 97 Autopsy Cases. H. J. Jewett and S. S. Blackman.—p. 200.
Urologic Complications Following Operation for Imperforate Hymen. C. M. Crigler.—p. 211.
Regeneration of Epithelium of Prostatic Urethra Following Resection. N. E. Berry and J. Miller.—p. 223.
Rupture of Urethra, New Diagnostic Sign. V. Vermooten.—p. 228.
Repair of Hypospadias and Urethral Fistula. A. B. Cecil.—p. 237.
Balanitis Xerotica Obliterans. A. G. Franks.—p. 243.
Nonparasitic Chyluria with Special Reference to Traumatic Chyluria. J. A. Lazarus and M. S. Marks.—p. 246.
Experiences with Intravenous Urography in General Hospital in India. C. M. Norfleet Jr. and P. J. Hodes.—p. 259.
Investigation of Spermatogenic Function of Testicles in Cases of Azoospermia. M. Huhner.—p. 266.

Kentucky Medical Journal, Bowling Green

44:239-278 (Aug.) 1946

President's Address: The Neglected Patient. W. A. Weldon.—p. 242.
Practical Points in Diagnosis and Treatment of Squint in Children. G. P. Guibor.—p. 244.
Causes and Distribution of Blindness in Kentucky Among Recipients of Aid to Needy Blind. R. Sory and F. W. Caudill.—p. 255.
Contusion Injuries of Globe. C. D. Townes.—p. 264.
Recent Developments in Use of Penicillin and Sulfonamides in Treatment of Diseases of Ear, Nose and Throat. K. N. Victor.—p. 266.
Treatment of Dendritic Keratitis. W. C. Wells.—p. 269.
Catarrhal Deafness. W. S. Snyder.—p. 272.
The Village Doctor. E. L. Smith.—p. 274.

Medical Annals of District of Columbia, Washington

15:363-412 (Aug.) 1946

Treatment in Psychiatry. A. M. Duval.—p. 363.
Recent Trends in Therapy of Liver Disease. L. J. Thomas.—p. 375.
Recent Advances in Anesthesiology. D. Stubbs.—p. 381.
Virus Pneumonia: Differentiation from Pulmonary Tuberculosis. P. R. Wilner.—p. 385.

15:413-472 (Sept.) 1946

Recent Developments in Neurology and Psychiatry. S. Katzenelbogen.—p. 413.
Penicillin Therapy in Practice of Internal Medicine and Pediatrics. Georgine Rotman-Kavka, H. L. Hirsh, H. F. Dowling and L. K. Sweet.—p. 420.
Papillary Cystadenocarcinoma of Ovary. J. K. Cromer.—p. 425.
Expert Medical Witness. J. A. Gannon.—p. 429.

Michigan State Medical Society Journal, Lansing

45:999-1134 (Aug.) 1946

New Anti-Histamine Drugs in Allergic Diseases. G. L. Waldbott.—p. 1051.
*Experiment in Free Chlorination of Public Water Supplies. W. DeKleine and R. J. Faust.—p. 1055.
Imported Tropical Disease—Community Problem. M. Dale.—p. 1057.
Medicine and Industrial Research. C. F. Kettering.—p. 1063.

Free Chlorination of Public Water Supplies.—DeKleine and Faust discuss the advantages of "free chlorination," more generally known as breakpoint chlorination, which is the treatment of public water supplies that has been introduced in a number of Michigan communities. They cite the case of a small city in western Michigan where the source of the water was an inland lake. Algae and weed growth were luxuriant. This unfiltered water was treated with the usual amount of chlorine, about 1.5 parts per million, and also about 0.1 part per million of ammonia. This provided a chloramine (combined chlorine) residual of between 0.3 and 0.5 part per million at the pumping station. The resulting tastes were so objectionable that the residents had to depend largely on bottled water for drinking purposes. It was recommended that the ammonia application be discontinued and that the chlorine treatment be increased in an amount sufficient to produce a residual of free chlorine.

Pennsylvania Medical Journal, Harrisburg

49:1305-1496 (Sept.) 1946

Psychosomatic Aspects of Arterial Hypertension. E. Weiss and M. Kleinbart.—p. 1321.
Operation for Chronic Dacryocystitis (Plastic Dacryocystorhinostomy). R. G. Hamilton.—p. 1327.
Evaluation of Blood Protein and Factors in Atopic Eczema. Patricia Drant.—p. 1331.
Treatment of Epidemic Diarrhea of Newborn. R. H. High.—p. 1334.

Psychiatric Quarterly, Utica, N. Y.

20:183-370 (April) 1946

Method of Resolving Acute Catatonic Excitement. J. N. Rosen.—p. 183.
Carl Gustav Jung—Defender of Freud and the Jews: Chapter of European Psychiatric History Under Nazi Yoke. E. Harms.—p. 199.
Benign Intracranial Space-Occupying Masses Simulating Mental Disorders. R. D. Whitfield.—p. 231.
Lure of the Supernatural. N. Fodor.—p. 253.
Fear. J. A. Brussel.—p. 269.
Management of Psychiatric Patients in Combat Area. T. E. Newell.—p. 275.
Psychopathology of Compulsive Smoking. E. Bergler.—p. 297.
Group Therapy in Extramural Clinic. Katherine W. Wright.—p. 322.

Surgery, Gynecology and Obstetrics, Chicago

83:289-416 (Sept.) 1946

Unusual Metastatic Manifestations of Breast Carcinoma: I. Metastasis to Mandible, with Report of 5 Cases. F. E. Adair and J. B. Herrmann.—p. 289.
Pelvic Floor in Parturition. R. M. H. Power.—p. 296.
Evaluation of Certain Drugs Used to Maintain Blood Pressure During Spinal Anesthesia: Comparison of Ephedrine, Paredrine, Pitressin-Ephedrine and Methedrine in 2,500 Cases. R. D. Dripps and Margery Van N. Deming.—p. 312.
*Use of Tyrothricin in Surgical Infections. D. D. Kozoll, K. A. Meyer, W. S. Hoffman and S. Levine.—p. 323.
*Identification of Clostridium Welchi in Mixed Cultures and Debrided Tissue and Determination of Sensitivity of Organism to Penicillin. G. Heller, M. E. Freeman, N. H. Shope and R. H. Kindrick.—p. 343.
Repair of Vesicovaginal Fistula Caused by Radiation. G. H. Twombly and V. F. Marshall.—p. 348.
Mandibular Tumors: Clinical, Roentgenographic and Histopathologic Study. L. T. Byars and B. G. Sarnat.—p. 355.
Cherney Incision as Applied to Surgery of Lower Ureter and Bladder. D. R. Smith.—p. 364.
Exposure of High Lesions of Sciatic Nerve. I. Aird.—p. 369.
Cineplastic Forearm Amputations and Prostheses. B. K. Rank and G. D. Henderson.—p. 373.
Effect of Pulmonary Resuscitative Procedures on Circulation as Demonstrated by Use of Radioactive Sodium. S. A. Thompson, Edith H. Quimby and Beverly C. Smith.—p. 387.
*Cancellous Bone Grafts for Infected Bone Defects: Single Stage Procedure. H. M. Coleman, J. E. Bateman, G. M. Dale and D. E. Starr.—p. 392.
Outlet Pelvimetry: Commentary, and Presentation of Pelvimeter for Measuring "Symphysis and Sacral Biparietal Distance." H. Thoms.—p. 399.

Tyrothricin in Surgical Infections.—Kozoll and his associates say that tyrothricin which contains both gramicidin and tyrocidin could combine the bacterial potency of the fomer with the stability and solubility of the latter. They studied the clinical effectiveness of tyrothricin by using it as a wet dressing in treating 77 patients with surgical infections, the majority of whom had failed to respond to other methods. Fifty of the 77 patients had excellent clinical results, 8 had fair clinical results and 19 had poor results. Tyrothricin, when used on one of the bilateral lesions in 6 cases, produced in 5 either a more rapid rate of healing, less pain and exudate, or a greater bactericidal effect than control measures in the contralateral lesion. It was most effective in hemolytic streptococcus lesions, next in those with Staphylococcus aureus and albus. It was ineffective when the preponderant organisms were gram negative. Tyrothricin appeared to encourage the growth of pseudomonas, pyocyaneus and diphtheroid organisms, but it did not produce anemia or hemolysis. Tyrothricin treatment was associated with mild skin reaction in 3 patients; these reactions disappeared when treatment was discontinued in 2 instances, and in spite of continuation of therapy in the third. Tyrothricin is recommended as a nontoxic, noninjurious antibiotic agent for local use in the treatment of surgical infections, if the wound is open, if there is adequate surgical drainage, if there is adequate blood supply and if the predominant organisms are streptococci or staphylococci or both.

Identification of Clostridium Welchi and Determination of Sensitivity to Penicillin.—Heller and his associates show that a rapid bacteriologic method for identifying gas gangrene organisms may be an aid in the management of contaminated wounds. At their laboratory the production of acrolein from glycerol has been used as the basis for a rapid test for Clostridium welchi. This procedure depends on (1) the aerobic growth of anaerobes in a specially prepared medium, (2) the development of acidity which determines the testing time for acrolein and (3) the testing for acrolein in the culture medium with a standardized Schiff's reagent. The inhibition of acrolein by the penicillin in the medium was taken as a measure of penicillin sensitivity.

Cancellous Bone Grafts for Infected Bone Defects.—Coleman and his associates, over the past fourteen months, have cleaned out 52 infected bone defects, filled them with cancellous chip grafts and closed them without drainage. The patient is treated with 20,000 units of penicillin intramuscularly every three hours, two days before operation. This is continued postoperatively until his temperature has remained normal from two to five days. At operation all scar tissue, granulation tissue and sequestrums are removed. The cavity is excised with an osteotome or curetted down to healthy bleeding bone. The wound is washed out and penicillin sulfathiazole powder is sprinkled liberally. The grafts are taken from the iliac crest. A trap door of cortical bone with attached periosteum is raised from the crest of the ilium. A wedge of cancellous bone can then be cut and further bone obtained with a curet. The wedge of cancellous bone is shaved with a sharp osteotome into thin chip grafts. The cavity is filled with chips and penicillin powder held together with coagulated autogenous plasma. One to 2 cc. of 0.2 per cent sterile agar is added as a coagulant. The tibia was involved in 29 cases, the femur in 12, the os calcis in 3, the humerus in 6, the carpus in 2. In all 52 cases infection was present at the time of operation, but no virulent infections have resulted and there has been no flare-up of infection after healing for periods up to fourteen months. The one stage method for obliterating infected bone defects saves months of hospital treatment and restores function before changes from disuse become irremediable.

Texas State Journal of Medicine, Fort Worth

42:301-350 (Sept.) 1946

Diagnosis of Liver Abscess by Means of Thorotrast Hepatosplenography. R. J. Reeves and K. A. Youngstrom.—p. 310.
*Para-Aminobenzoic Acid in Treatment of Endemic Typhus Fever. M. D. Levy and W. T. Arnold.—p. 314.
Prostigmine Usage in Pediatrics. G. A. Title.—p. 316.
Water in Relation to Health Problems in Children in Texas. A. E. Hansen.—p. 320.
Cleaning Traumatic Wounds by Multiple Fine-Stream Pressure Irrigation—Improved Method. J. P. Barnes.—p. 322.
Management of Prostatic Surgery in the Aged. J. P. Bridges.—p. 325.
Primary Carcinoma of Gallbladder. F. J. Kelly and T. Speed.—p. 327.
Fungus Infections of Cornea: Case Report of Keratomycosis Due to Monilia. E. M. Sykes.—p. 330.
Epidemiologic Investigation of Typhus Fever in Texas, 1943-1945. J. V. Irons and G. W. Cox.—p. 332.
Teamwork in Cancer Control. J. L. Neff.—p. 336.

Para-Aminobenzoic Acid in Endemic Typhus.—According to Levy and Arnold murine typhus is endemic in Texas and has considerably increased. They report 6 cases of murine typhus observed in the Medical Service of the Southern Pacific Hospital in Houston, Texas. The diagnosis was made on clinical symptoms and findings and by the determination of the Weil-Felix reaction. Since para-aminobenzoic acid inhibits the growth of rickettsiae and had proved effective in an epidemic of louse borne typhus fever, the authors used it in the aforementioned 6 cases, administering 2 Gm. every two hours. The drop in temperature and relief of symptoms were almost dramatic in their effect. No side effects were noted.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

19:349-392 (Sept.) 1946

Dose Measurement in Beta Ray Therapy. G. W. Bloomfield and F. W. Spiers.—p. 349.
Dose Measurements with Radium Beta Ray Applicators. G. J. Neary.—p. 357.
New Units for Measurement of Radioactivity. E. U. Condon and L. F. Curtiss.—p. 368.
*Pyridoxine in Treatment of Radiation Sickness. L. M. Shorvon.—p. 369.
Moscow's X-Ray Services. R. Golonzko.—p. 371.
Radiologic Demonstration of Regression of Retroperitoneal Hodgkin's Disease. H. Cohen.—p. 372.
Subacute Ileoileal Intussusception in Adult: Case Report. E. Tiscenco.—p. 374.
Wrist Injuries in Service Patients. F. Pygott.—p. 381.
X-Ray Appearances of Pharyngeal Palsy. B. Mannheimer.—p. 383.
Leontiasis Ossea. W. Tennent.—p. 388.

Pyridoxine in Radiation Sickness.—According to Shorvon pyridoxine is a member of the vitamin B group occurring principally in liver and yeast. It can be obtained in tablets for oral use and in ampules for intravenous medication. The author employs the tablets, giving five 10 mg. tablets daily. Occasionally he gives intravenous injections of two ampules (each containing 50 mg.) a week. In addition to its value in the treatment of radiation sickness, it increases the leukocyte count. This is of importance because of the tendency for x-rays to depress the white cell count. The author used pyridoxine in the treatment of 24 cases of radiation sickness. Good results were obtained in 22 of these.

British Medical Journal, London

2:288-318 (Aug. 31) 1946

*Tobacco and Ulcer Dyspepsia. R. A. Jamieson, C. F. W. Illingworth and L. D. W. Scott.—p. 287.
Electroconvulsion Therapy in 301 Patients in General Hospital, with Special Reference to Selection of Cases and Response to Treatment. D. E. Sands.—p. 289.
*Technic for Use of d-Tubocurarine Chloride with Balanced Anaesthesia. T. C. Gray and J. Halton.—p. 293.
Some Uses of Thrombin in Surgery of Ear, Nose and Throat. P. Reading.—p. 295.
Staphylococcic Spinal Osteomyelitis with Acute Extradural Abscess. G. Blackburn and R. P. Jepson.—p. 297.

Tobacco and Ulcer Dyspepsia.—Jamieson and his associates report a follow-up survey of 473 patients who had suffered acute perforation of a peptic ulcer from one to five years previously. They were recalled for examination and were closely questioned about their smoking habits. Heavy cigaret smoking was associated with severe symptoms, but pipe smoking with mild symptoms. It is suggested that the relationship between smoking and severity of symptoms is indirect and depends on age: symptoms tend to be severe in the young and mild in the old. Cigaret smokers are in the main young, while pipe smokers are in the main old. There was no evidence that increase or decrease in tobacco consumption influenced the severity of symptoms.

Curarine with Balanced Anesthesia.—Gray and Halton state that this anesthesia is suitable for all endoscopic investigations, but particularly for bronchoscopy and esophagoscopy by virtue of the complete relaxation of the vocal cords and the pharyngeal sphincter. A single injection of 15 mg. of curarine (d-tubocurarine) is followed by a suitable dose of a barbiturate, both given intravenously. Administration for longer procedures is essentially a balanced anesthesia. After induction the patient is maintained in a light plane by means of an intravenous barbiturate. The author stresses that curare should not be considered merely as an "aid" to anesthesia: it is an integral part of the anesthetic procedure. This is by virtue of four important properties: (*a*) It is quickly eliminated, leaving no toxic aftereffects; (*b*) it produces relaxation as and when desired; (*c*) it abolishes laryngeal and bronchial spasm, making intubation of the trachea necessary only in selected types of cases; (*d*) because of the undoubted synergistic action with the anesthetic agents, the dose necessary to keep a patient asleep can be considerably reduced. If these four properties are borne in mind, and if a correctly balanced anesthesia is maintained, patients after long abdominal and thoracic operations are awake, in good vasomotor equilibrium, free from nausea and able to exert their respiratory functions to the full. There is in consequence a smooth postoperative convalescence.

Journal of Physiology, Cambridge

105:1-94 (July) 1946. Partial Index

Effect of Dietary Restriction on Incisor Teeth of Rachitic Rats. J. T. Irving.—p. 16.
Presence of Sympathomimetic Substance in Extracts of Mammalian Heart. U. S. v. Euler.—p. 38.
Distribution of Excitation and Inhibition in Single Fiber Responses from Polarized Retina. R. Granit.—p. 45.
Investigation for Presence of Skin Protease Inhibitory Factor in Burned Skin. A. Beloff and R. A. Peters.—p. 54.
Changes in Intestinal Tone and Motility Associated with Nausea and Vomiting. R. A. Gregory.—p. 58.
Observations on Plasma Volume Estimations with Dye T 1824. E. B. Reeve and J. Armin.—p. 72.

Medical Journal of Australia, Sydney

2:109-144 (July 27) 1946.

Behavior of New Guinea Strains of Plasmodium Falciparum and Plasmodium Vivax when Cultivated in Vitro. R. H. Black.—p. 109.
Genitourinary Disorders Occurring in Singapore Prisoner of War Camp, with Special Reference to Polyuria and Nonspecific Inflammations. H. A. Phillips.—p. 111.
Profuse or Irregular Menstrual Periods in Young Women: Practical Program of Treatment. A. Grant.—p. 113.
*Advances in Surgery of Hand Infections, with Special Reference to Pad Infections. V. J. Kinsella.—p. 116.
Place of Surgery in Diseases of Chest. C. J. O. Brown.—p. 118.
Distribution of Fluorine in Potable Waters in New South Wales and Tasmania. R. L. Reid and N. D. Martin.—p. 121.

Surgery of Hand Infections.—Kinsella uses the term "pad infections" for the subcutaneous infections which tend to become localized in the palmar fatty pads. Pad infection I, the so-called felon, involves the distal phalangeal pad. Pad infections II and III involve the middle and proximal phalangeal pads respectively. Suppurative tenosynovitis may occur as a later complication. Pad infection IV involves the pads in the distal part of the palm and may spread to the web. It is usually due to infection occurring beneath a callosity, whereas infection in the first three pads is usually due to a puncture wound. Pad infections II and III may be distinguished from acute suppurative tenosynovitis; in acute suppurative tenosynovitis the swelling of the finger is uniform and the finger is sausage shaped; in pad infections the swelling is most pronounced over the affected pad, and the finger is spindle shaped. Incisions required to evacuate pus in pad spaces II, III or IV may be C shaped or cross shaped. The author uses for postoperative treatment the method which imitates the Winnett Orr technic. Dressings are changed infrequently, usually once a week. He regards the sulfonamides and penicillin as important additions. Erysipeloid infections occur in those handling fish and pigs. In these cases an ill defined area of inflammation spreads diffusely and irregularly from a slight injury. Operation is not indicated, for pus does not form. This infection is self limited.

Proceedings of Royal Society of Medicine, London

39:507-584 (July) 1946. Partial Index

*Treatment of Ulcerative Colitis with Intestinal Mucosa. A. M. Gill.—p. 517.
Observations on Etiology and Treatment of Sprue. A. L. Wingfield.—p. 519.
Tomography in Diagnosis of Lung Carcinoma. J. B. Hartley.—p. 531.
Observations on Radiology of Pancreas. R. A. K. Harper.—p. 534.
Problem of "Postmaturity." A. J. Wrigley.—p. 569.

Treatment of Ulcerative Colitis with Intestinal Mucosa.—Gill states that the cause of ulcerative colitis in some cases may lie in a deficiency caused by the lack of some factor produced by the small intestine. Treatment of some cases of ulcerative colitis with intestinal mucosa has given promising results. There is a latent interval of about three weeks before any appreciable improvement is noted. Mucosa taken from the different segments of the small intestine seems to be effective, although possibly jejunal mucosa produces a more lasting effect.

Presse Médicale, Paris

54:497-508 (July 27) 1946

Influence of Aminopyrine and of Salicylic Acid on Natural Vegetative Factors; Therapeutics for Rheumatism and for Anaphylactic Accidents. Danielopolu, M. Popesco and D. Crivetz.—p. 497.
Statistical Evidence in Surgical Treatment of Arteritis Obliterans of Limbs. P. Wertheimer and R. Gauthier.—p. 497.
Neurosurgical Point of View in Cerebral Edema. J. A. Chavany and G. Guiot.—p. 499.
Small Umbilical Hernia of Infants; Indications for Surgical Treatment and Technic. M. Fèvre and J. R. Barcat.—p. 500.
*Twenty Years of Treatment of Diabetes Insipidus by Nasal Administration of Powdered Posterior Lobe of Pituitary. A. and Lucie Choay. —p. 500.

Treatment of Diabetes Insipidus by Nasal Administration of Powdered Posterior Lobe of Pituitary.—The Choays have used this method for twenty years to control thirst and polyuria in more than 100 cases of diabetes insipidus. The powder is obtained by pulverizing and sifting posterior lobes of beef pituitary glands previously dried in a vacuum and in the presence of sulfuric acid or dehydrated by acetone. One ox supplies about 0.08 Gm. of powder, i. e. about one daily dose. The powder is taken into the nose in the same manner as snuff. The patient should blow his nose prior to the administration of the powder but should not blow his nose or sneeze for several minutes afterward. The best results were obtained with three to five doses of 0.01 Gm. in the course of one day and with 1 dose of 0.02 Gm. at night before going to bed. In cases of severe polyuria, mixed treatment by nasal administration of powder during the day and by an injection of 10 mg. at night is suggested. In the average case the effect of the powder when administered correctly to a healthy nasal mucosa lasted for three to six hours during the day and for six to ten hours during the night. The contraindications to the method are hypertrophic rhinitis, chronic rhinorrhea and spasmodic rhinitis. Even a simple coryza may cause failure and favor local infection. Preliminary anterior rhinoscopy, therefore, is as important as a preliminary injection of the extract. Failure of nasal administration of the powder is to be expected in the case of failure of the preliminary injection.

Praxis, Bern

35:449-464 (July 11) 1946

*Endocrine Treatment of Carcinoma of Prostate. G. Reimann-Hunziker. —p. 449.
The Notion of Alimentary Equilibrium in Daily Practice. L. M. Sandoz. —p. 452.

Endocrine Treatment of Carcinoma of Prostate.—According to Reimann-Hunziker only radical operation of a carcinoma of the prostate brings prospects of a complete cure. This treatment is rarely possible because the patients come under medical care too late. All other treatments are merely palliative. Castration and estrogenic therapy may prolong life and in many cases pains and dysuria may temporarily disappear. Improvement is usually most rapid if castration is followed by a transurethral electroresection with subsequent protracted medication with diethylstilbestrol. With this combined treatment the longest average survival is obtained. Occasionally improvement of the general condition is so good that the patient may be able to work again for a while. The primary tumor as well as the metastases may regress. However, neither castration nor estrogenic therapy will prevent metastatization. Improvement is always only temporary and persists for only about six months or somewhat longer. The hope that the tumor might regress sufficiently so that it might become operable has not been realized. The determination of the serum phosphatase will, if it is positive, give information about the prognosis and the efficacy of a treatment. A high phosphatase value suggests bone metastases.

Revista Méd.-Quirúrg. de Patol. Femen., Buenos Aires

14:71-128 (April) 1946. **Partial Index**

*Erythroblastosis of Newborn Infant with Rh Positive Mother Sensitized by Rh Factor. M. A. Etcheverry.—p. 83.

Erythroblastosis of Newborn Infant.—In 80 mothers of infants with erythroblastosis fetalis Etcheverry found the blood Rh negative in 69 (87 per cent) and Rh positive in 11 (13 per cent) of the cases. In 1 instance the blood of both parents and of the infant with the icteric type of erythroblastosis was of the O group and Rh positive. The blood subtypes were different, namely, Rh′ for the mother and RhO′ for the father and the infant. Anti-Rh antibodies of Anti-RhO specificity were encountered in the mother's blood. Successful therapy consisted in blood transfusion every three days up to a total of five transfusions, for which blood of the group, type and subtype of those of the mother was used. Injections of vitamin K and of liver extract were also administered to the infant.

Acta Medica Orientalia, Jerusalem

5:177-208 (June) 1946

Further Observations on Enhanced Fragility of Red Cells in Malaria Patients. D. Birnbaum, N. Goldblum and I. J. Kligler.—p. 177.
*Penicillin Through Duodenal Tube in Gastric Surgery. J. Dwek and F. Mandl.—p. 185.
Influence of Buffer Solutions on Gastric Acidity. M. Grotto.—p. 190.
Rare Case of Thromboangiitis Obliterans. B. Neumann.—p. 197.
Laboratory Improvements in Microbiochemistry. F. Rappaport and F. Eichhorn.—p. 199.

Penicillin Through Duodenal Tube in Gastric Surgery.—Dwek and Mandl point out that the acidity of the gastric juice is reduced after operations on the stomach because of the removal of the hydrochloric acid producing glands in subtotal gastrectomy and the regurgitation of the alkaline bile into the stomach after a well functioning gastroenterostomy. They administered penicillin through the duodenal tube to 7 patients, to 4 after subtotal gastrectomy and to 3 after gastroenterostomy. The dosage varied, some patients being given doses of 12,500 and 6,500 units, others several doses of 25,000 or 50,000 units and still others a single dose of 100,000 units. The level of penicillin in the blood serum was within the therapeutic range in 5 of the patients. The duodenal tube method avoids the unpleasant effects of the numerous injections necessary with the parenteral route of administration.

Nordisk Medicin, Gothenburg

30:1037-1084 (May 10) 1946. **Partial Index**

Supravesical Hernias. I. C. Højensgaard.—p. 1037.
Experiences in After-Treatment of Amputation Stumps. L. Hagelstam. —p. 1040.

Hospitalstidende

*Investigations on Course of Scarlet Fever, Its Complications and Their Treatment in Five Year Period, with Special Regard to Effect of Scarlet Fever Convalescent Serum in Preventing Complications. I. Søndergaard.—p. 1043.

Duodecim

Nature of Paranoia. L. Saarnio.—p. 1051.
Screw Traction Apparatus for Humerus. K. R. Inberg.—p. 1059.

Norsk Magasin for Lægevidenskapen

Hemihypertrophy. L. Gram.—p. 1061.
Fatal Poisoning with Sodium Silicofluoride (Rat Poison). A. S. Johannessen—p. 1065.

Hygiea

Thiouracil Treatment of Exophthalmic Goiter with Complications. H. Lindholm.—p. 1071.
Unique Case of Hemangiolymphangioma in Broad Ligament of Uterus. O. Johansson and Åke G. H. Lindgren.—p. 1073.

Scarlet Fever and Its Complications.—In 1,061 cases of scarlet fever from 1940 to 1944 in patients aged from 6 months to 65 years the mortality was 0.2 per cent. Most cases occurred during the winter months. The frequency of complications seemed unrelated to the age. Lymphadenitis occurred in 28 per cent, otitis media in 10 per cent, arthralgias in 7 per cent and nephritis in 3 per cent of the cases. Søndergaard states that early treatment with scarlet fever convalescent serum did not prevent complications; sulfanilamide early in the course perhaps reduces the number of complications. Erysipelas and otitis media should be treated with sulfanilamide or sulfathiazole; in lymphadenitis their effect is doubtful. Application of these agents in treatment of the other complications appears useless. The high sedimentation reactions are caused mainly by the arthralgias, the long periods of hospitalization mostly by nephritis and otitis media.

Book Notices

Diabetes: A Concise Presentation. By Henry J. John, M.A., M.D., F.A.C.P. Cloth. Price, $3.25. Pp. 300, with 74 illustrations. St. Louis: C. V. Mosby Company, 1946.

This book represents the accumulated interest of its author, whose experience has been large and intensive. It contains much that is sensible and good, and even when the reader will feel that he cannot subscribe to the author's dicta he will still be indebted to him for having challenged his point of view. The volume is not an all inclusive discussion of the subject of diabetes. It is intensive in some phases and passes lightly over other phases of the subject. That to a certain extent is inevitable in any monograph. It would be more apt to appeal to the seasoned practitioner than to a student of medicine, and yet the practitioner who is not experienced in the handling of diabetic patients also needs systematized guidance and approach. When all is said and done, in dealing with the description of a disease it is best accomplished by considering its etiology, pathology, symptoms, diagnosis, complications and treatment in classic nosographic style. No one has yet found a better way. When this systematization is ignored, whether each chapter or section is designated as such is not as important as is a logical sequence in the presentation. Otherwise the usefulness of a book may be definitely impaired because valuable passages and observations may be misplaced and remain unnoticed. John has devoted a medical lifetime to diabetes, and his book describes many of the ins and outs of the subject. His book is a greater contribution to the subject of diabetes than that of the publisher to the art of bookmaking. This shortcoming can be charged only in part, to the war and its aftermath.

Nursing and Nursing Education. By Agnes Gelinas, R.N., A.M., Professor of Nursing and Chairman of the Skidmore College Department of Nursing—New York Post-Graduate Medical School and Hospital, New York. Studies of the New York Academy of Medicine, Committee on Medicine and the Changing Order. Cloth. Price, $1. Pp. 72. New York: Commonwealth Fund; London: Oxford University Press, 1946.

Consistent with the type of book sponsored and published by the Commonwealth Fund, this edition has the meat of the problem clearly stated. It is a surprisingly small volume for so much information. A brief summary of past developments precedes the outlining of contemporary problems with the advice "Nor is the maintenance of standards, once they have been attained, sufficient: to have reached a goal is commendable, but the ground gained must be held and new ground won." The necessity of changes in present day educational methods is justified by the choice of a few but exceptional statistics which drive the points home. Future developments indicate that a larger number of qualified nurses will be needed during the next ten years than has ever been experienced before in our country. The demand is really being exerted now—before an adequate number of specially trained nurses can be supplied for the specialties that are developing in nursing as they have developed in the practice of medicine. Estimates indicate that 355,000 graduate nurses will be available in 1948, but the postwar requirements for the country call for 485,600 full time registered professional nurses. The need for larger classes in the face of elevation of educational standards is obvious.

Recreation and the Total Personality. By S. R. Slavson. Cloth. Price, $3. Pp. 205. Association Press, 347 Madison Ave., New York 17, 1946.

There are few books to date which put recreation into perspective as a derivative of man's basic nature as does this publication. This postwar volume is most timely, because in these days of reduced work hours, automatic labor and time saving devices, leisure time is on the increase. How can recreation make its maximum contribution to the total well-being and wholesome living of individuals and communities? Practitioners, recreationists, educators, sociologists, community organization leaders, social and group workers, hospital and institution staffs, parents-teachers, work foremen and the general community will do well to read this book, as from it emerges a concept of recreation embracing the insights of mental hygiene, education, psychology, sociology, social work and group work. The ten chapters which comprise the book are on the nature and scope of recreation, unconscious motivations, fitting recreation to the individual, recreation and the democratic culture, the problem of competition, a demonstration of the new recreation, constants, variables and differentials, leadership and recreation, supervision: a creative relation, and community resources. The author suggests technics that lean less on a stock of artifices, games and facilities and more on an individualization that will balance the deprivations from which we suffer, such as physical underfunctioning, frustration of unconscious drives, devaluated self esteem, lack of self assertion and inadequate creative expression. Recreation is a part of the total educational experience of man in modern society. Its value can be realized only when some traditional views of recreation are modified or eliminated.

Eléments de psycho-physiologie. Par Henri Roger, professeur honoraire de physiologie à la Faculté de médecine de Paris. Paper. Price, 350 francs. Pp. 428, with 20 illustrations. Masson & Cie, 120 Boulevard Saint-Germain, Paris 6e, 1946.

This book, written by a French physiologist, purports to put psychology on a sound and scientific basis. It is too voluminous for an introduction and much too superficial for a textbook, besides lacking bibliography or index. Heavily weighted in favor of French literature, it starts out with a short reflexology, not taking into account modern research on reflexes of posture, vestibular reflexes, and so on. This is followed by a purely descriptive treatment of instincts, of which the author seems to recognize about six: the instincts of alimentation, defense, reproduction, motherliness, gregariousness and migration. He also mentions an instinct of play. In the following part the intellectual acts are based predominantly on cerebral function. The emotions are treated descriptively. The author differentiates between primary emotions (fear, anger and love) and secondary emotions, under which heading one finds a motley assembly such as feelings of justice, of religion, of beauty. Of gestalt psychology, analytic psychology, the author has only the vaguest notion. The few times he mentions Freud he misquotes him (for instance, accusing him of reducing all instincts to the reproductive one or ascribing the causes of all dreams to the unconscious memory of erotic stimulations). In the final part, on psychophysiologic functions, one finds a treatise on determinism and freedom, chapters on heredity, periodicity (including a short review on electroencephalography), sleep and dreams, and 20 pages on consciousness and the unconscious acts, omitting, of course, the large body of research on the dynamics of the unconscious.

Endoscopia normal de la uretra membranosa y del cuello del bulbo. Por Hector Diaz Castro, profesor agregado de urología de la Facultad de medicina de Montevideo. Este trabajo fué presentado como tesis, al concurso para profesor agregado de urología de la Facultad de medicina. Paper. Pp. 151, with 55 illustrations. Imprenta "Rosgal," de Hilario Rosillo, Montevideo, Uruguay, 1944.

In contradistinction to the extensive studies reported on the anatomy of the prostatic and anterior urethra, the membranous urethra and bulbar urethra seem to have been neglected. Nor do existing descriptions correspond accurately with the actual morphologic and anatomic conditions observed endoscopically. The author presents his own conception based on several years' study of the region, which is influenced throughout most of its course by the interplay of muscles and the intricate complex composed of the musculoaponeurotic combination known as the urogenital diaphragm. The dynamic character of the area renders cadaver studies misleading, the postural variations due to muscular activity producing transitory morphologic changes. In the cadaver the urethral muscle is fixed. Endoscopy of the urethra has hitherto been largely limited to the prostatic and anterior urethra and verumontanum, the sites of predilection for most tumors and inflammatory changes. After reviewing the classic conceptions based on the anatomic studies on the cadaver, the author proceeds to describe the technic for endoscopy of this particular region and presents certain anatomic and physiologic deductions based thereon. Following a review of endoscopic findings, these are compared with the histologic anatomic findings in various stages of embryologic life and in the adult.

The endoscopic images are all interpreted in relation to roentgenograms of the normal states of dilatation and contraction: The physiology of the membranous urethra and neck of the bulbar urethra is explained, including a discussion of sympathetic and voluntary innervation, the special physiology of the membranous urethra, of the bulbar genital function in ejaculation. Also the physiopathology of the membranous urethra in neurogenic hypertonic and hypotonic vesical disturbances is demonstrated, as well as their endoscopic aspects. It is emphasized that the canalicular and muscular systems form an inseparable complex of primary and accessory muscles controlled by the sympathetic and voluntary nervous system. The interbulbomembranous sheath serves as a point of fixation for the urethra and as a support for its motor muscle. He concludes that almost the entire dynamism of the membranous urethra is located in the median portion of the inferior wall, which he describes as the poculiform portion. The other portions play a much less significant physiologic role. In the final chapter he discusses the extremely rare congenital malformations of the membranous and bulbar urethra, with a description of 2 cases.

Disorders of the Blood: Diagnosis, Pathology, Treatment and Technique. By Sir Lionel E. H. Whitby, C.V.O., M.C., M.D., Regius Professor of Physic in the University of Cambridge, Cambridge, and C. J. C. Britton, M.D., D.P.H., Assistant Pathologist, The Bland-Sutton Institute of Pathology, The Middlesex Hospital, London. Fifth edition. Fabrikoid. Price, $10. Pp 665, with 86 illustrations. Philadelphia: Blakiston Company, 1946.

In preparing the fifth edition of their widely known work the authors have made extensive revisions in the chapters dealing with the origin and development of the blood cells, the hemolytic anemias, the anemias of infancy and childhood, agglutination of the red blood cells and blood transfusion and technic. The text has been lengthened, and there are some new colored illustrations of the bone marrow. Although greatly disturbed by the war, the authors have nevertheless done their utmost to keep the material up to date. This has been particularly difficult in view of the rapidly changing views regarding the Rh factors. Much of the best research on the blood is now being carried on in laboratories in the United States, and much which was not easily available during the war is now becoming for the first time common knowledge. The authors have done a great deal to acquaint themselves with recent advances in the United States, but a new edition will probably be necessary within a short time if all essential new information is to be added.

Principles of Radiography. By C. B. Minnich, B.Sc., R.T. Fabrikoid. Pp. 130, with 43 illustrations. Kansas City, Missouri: The Author, 1946.

Because it contains essential elementary principles of the science of radiography in clear but concise form, this monograph makes an excellent handbook for the novice learning to operate x-ray equipment. Especially good is the review of the elementary physics of electricity and the description of the electrical setup of the x-ray machine. In addition, chapters on the subjects of radiation, the darkroom, the calibration, technical variations and x-ray protection are dealt with. This book was meant to be only a brief primer in basic study of x-rays and therefore does not concern itself with such topics as positioning, fluoroscopy or interpretation of x-ray films. Because it may be easily and quickly read and understood, the book is recommended to physicians who desire a summary knowledge of the physics of x-rays. It is highly recommended for use by student x-ray technicians.

Health from the Ground Up. By Karl B. Mickey. Paper. Pp. 125. Chicago: *International Harvester Company*, 1946.

Here is a provocative essay on the relationship between health and the soil in which food crops are grown. The author, who is in the public relations department of the International Harvester Company, believes that "exhaustion of the soil has been an important factor in the decline of civilizations" and that every effort must be made to secure more information on the relationship between the soil and human health. The material is well written, and there are many quotable statements throughout the book. An excellent bibliography of more formal treatments of the subject is appended.

The Results of Radium and X-Ray Therapy in Malignant Disease: Being the Second Statistical Report from The Holt Radium Institute, Manchester, Now Part of the Christie Hospital and Holt Radium Institute, Years 1934-1938 Inclusive, Assessed at 5 Years, and 1932 and 1933 Assessed at 10 Years. Compiled 1945 by Ralston Paterson, Margaret Tod and Marion Russel. Paper. Price, 7s. 6d. Pp. 147, with 3 illustrations. Edinburgh: E. & S. Livingstone, Ltd., 1946.

This is the second statistical report from the Holt Radium Institute, Manchester. The first part is a general survey of the treatment of cancer as a whole and is intended to interest the layman, the hospital administrator and the general practitioner. The second part is an evaluation of different methods of treatment. The technics are described and reference is made to publications in which may be found a full account of the physical principles together with detailed instructions for specialized methods. The third part refers briefly to the first report and gives a table showing the ten year results of treatment. The authors state that radium and x-rays are equally important, that each has advantages and that the two agents are often complementary. The tables are so arranged as to give the results of radiotherapy in various stages of the disease, thus permitting statistical comparison of different methods. The report represents a careful and complete study of the results of radiotherapy in a large group of cancers extending over a period of many years. It should be of interest to the physician as an indication of the role of radiotherapy in cancer as well as to the specialist, who is interested in the details of treatment. The research covered by the report constitutes a fundamental contribution to clinical cancer research.

Encyclopedia of Endocrinology. By Hans Selye, M.D., Ph.D., D.Sc., Professor and Diector of The Institute of Experimental Medicine and Surgery, University of Montreal. Section IV: Ovary. Volume VII (in two parts): Ovarian Tumors. Bibliography. Fabrikoid. Price, $21.75. Pp. 349, with 427 illustrations. Montreal: Richardson, Bond and Wright, 1946.

Dr. Hans Selye, convinced of the importance of the complete knowledge of the available literature for the study of any subject, began a long time ago to collect a library dealing particularly with endocrinology. His library now contains approximately 250,000 entries. The Encyclopedia is a step toward making that material generally available. The first publication was the "Classified Index of the Steroid Hormones and related Compounds," published in 1943. Now come two volumes on "Ovarian Tumors," which constitute part of section IV, which will be devoted to the ovary. The entire encyclopedia is to consist of ten sections covering all the glands of internal secretion. The encyclopedia is loose leaf, so that it may be kept up to date by the addition of new material. Every publication referred to is suitably indexed by number, so that reference may be had to the original source. The first two volumes are magnificently illustrated and written with an economy of style and diction highly commendable in a work of this type. There is a complete subject index and a bibliography of the periodicals concerned. The second volume is devoted wholly to the bibliography of ovarian tumors.

The Art of Medicine in Relation to the Pregress of Thought: A Lecture in the History of Science Course in the University of Cambridge, February 10, 1945. By A. E. Clark-Kennedy, M.D., F.R.C.P., Physician to the London Hospital and Dean of the Medical School, London. Paper. Price, 75 cents. Pp. 48. New York: Macmillan Company; London: Cambridge University Press, 1945.

The publishers have made available in pamphlet form this lecture in the History of Science course. After reviewing briefly the progress of medical science, Dr. Clark-Kennedy concludes his address with a consideration of medicine and modern life. He fears the development of a medical science from which the humanities will have been lost. Thus he says "We live in an age in which scientific knowledge has outrun philosophy, narrow specialization is the order of the day, religion has ceased to be a unifying force in education, belief in the Christian revelation seems to have declined, and excessive anxiety over the health of the body has replaced preoccupation with the welfare of the soul. Humanity seems to be traveling through the night without any white line to keep us in the center of the road."

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

NEWER FUNGICIDES

To the Editor:—What new remedial measures are indicated in the treatment of epidermophytosis and other fungous infections? I have been informed that recent work by military organizations has resulted in the selection of remedies which are more or less specific in these cases.

Edwin R. Watson, M.D., Macon, Ga.

Answer.—A number of promising therapeutic agents for the treatment of fungous infections have been adequately tried during the war years. The most important new development has been the use of mixtures of fatty acids and their salts such as *sodium or calcium propionate*-propionic acid mixtures. These compounds were found to be effective against human pathogenic fungi. They have also been used with good therapeutic results *in otomycosis and oidiomycosis, thrush and blacktongue.* The propionates are used in 10 to 30 per cent concentration in liquids, powders and ointments. Favorable results have also been reported following the use of undecylenate-undecylenic acid ointment. However, a number of observers have preferred the propionate-propionic acid preparations to the undecylenates. Evidence is accumulating which seems to indicate that mixtures of propionates and caprylates are the most effective of the fatty acids so far tried.

PROLONGED USE OF NASAL VASOCONSTRICTORS

To the Editor:—What are the potential effects on the nasal mucosa of a vasoconstrictor such as neosynephrin administered daily for many months?

M.D., Illinois.

Answer.—Several reports of undesirable effects from prolonged use of vasoconstrictor substances in the nose have appeared in literature in the past few years.

Experimentally the action of the cilia has not been depressed by such vasoconstrictor substances as ephedrine, neosynephrin, tuamine and some related substances in appropriate concentrations, and injurious effect to the mucosa has not been observed. While these drugs have had a therapeutic value in certain acute or subacute conditions, the prolonged use of at least two of the group (ephedrine and privine) has on numerous occasions been observed to cause an undesirable reaction in the nasal mucosa which is relieved only for a brief period by the vasoconstrictor effect. The mucosa becomes congested and has a diffuse dull red somewhat dry and irritated appearance and the airway is obstructed. Elimination of all intranasal medication in such cases has been followed by relief of symptoms within three to four days. A permanent pathologic change in the mucosa as a result of the use of vasoconstrictors has not been reported.

The cause of the congestion appears to be that the vasoconstrictor action is associated with irritation and is followed by vasodilatation and increased congestion.

Such a reaction frequently has been observed after the use of epinephrine, which has a strong vasoconstrictor effect. Repeated usage of vasoconstrictors produces a continuous state of irritation and mucosal congestion which can be termed a chronic rhinitis due to medicaments.

SCOPOLAMINE IN OBSTETRIC ANESTHESIA

To the Editor.—Please discuss the use of scopolamine in obstetric anesthesia. Scopolamine 1/150 to 1/100 grain (0.4 to 0.6 mg.) as preanesthetic medication should reduce mucous secretions in the respiratory tract. If the time is short, it has been suggested that the drug be given intravenously in the same dosage. Will this procedure have untoward effects on the mother and/or the baby?

M.D., Pennsylvania.

Answer.—Scopolamine in the dosage mentioned would certainly minimize mucous secretions. However, a smaller dose has been found adequate for the purpose even when given by hypodermic injection. There is no objection to giving scopolamine intravenously well diluted. One three-hundredth grain (0.2 mg.) or at most ½00 grain (0.3 mg.) has proved adequate. Neither this nor larger doses have any serious untoward effects on either mother or child. The accompanying psychic sedation is desirable. Larger doses do sometimes cause excessive dryness of the mucous membranes which is unpleasant to the mother.

SUN GLASSES

To the Editor:—Please discuss the harmful or beneficial effects on the eyes of the average sun glasses sold in drug stores and dime stores throughout the country.

Paul N. Taylor, M.D., Washington, D. C.

Answer.—Many poorly fitting and cheap glasses cause ocular distress and headaches; a person who has such distress when he wears glasses naturally takes them off, just as a man takes off a pair of shoes that do not fit him comfortably.

The light from which our eyes are protected by "sun glasses" may be considered as follows: (*a*) Sunlight: Very bright sunlight is distressing in varying degrees to all eyes. This is the reason why the eyelids are kept closed, or nearly closed, when one is facing such a light. (*b*) Ultraviolet: Ultraviolet light of the wavelength of approximately 300 millimicrons, such as is present in a rarefied atmosphere on high mountains or in dense snow fields, or such as comes from arc lights or welding machinery, causes irritation and temporary inflammation of the superficial cornea and conjunctiva, coming on eight to twenty-four hours after exposure and lasting a day or more. Welders, for instance, are protected by special goggles. (*c*) Infra-Red: Eclipse blindness is a burn of the macular area, a result of the infra-red rays, and comes on immediately and is permanent. Smoked glasses are used to prevent this in those who wish to look at an eclipse. (*d*) Glare: Almost all of us are made uncomfortable by "glare"; but pathologic lesions produced by "glare" have not yet been found.

The average sun glasses, obtained in drug and ten cent stores, if sufficiently dark, are as a rule comforting to the eyes of the average wearer on an average bright day, on the water or on the beach where they are usually used. They reduce the total amount of light entering the eyes. The idea that certain makes of glass do not transmit the "harmful" ultraviolet light is mostly sales talk, as the ordinary white glass allows but little ultraviolet light to pass through. In fact, in order to obtain passage for ultraviolet through a window pane it has to be specially made for that purpose. A certain amount of ultraviolet light is beneficial to the eyes; it is for this reason that vacations are taken at the seashore and in the mountains, and in the winter patients are sent to sunny climes.

VITAMIN K

To the Editor:—Is there any danger in the prolonged daily administration of 2 mg. of menadione in a case of intestinal hemorrhage of unknown origin? There is no evidence of prothrombin deficiency. A multiple vitamin capsule includes 10,000 U. S. P. units of vitamin A and 1,000 U. S. P. units of vitamin D. What deleterious effect might be produced by the prolonged administration of one capsule daily in the case referred to?

M.D., Illinois.

To the Editor:—For the past two years I have been giving 1 mg. of vitamin K hypodermically to each expectant mother when she goes into labor and also 1 mg. of vitamin K hypodermically to each newborn infant shortly after birth. Is this of any nutritive value and are these dosages correct? Is there any danger in this procedure? Recently detail men have said that vitamin K is now prepared in 5 mg. ampules of 1 cc. each and that this is the proper dose for the type of case described.

M.D., Texas.

Answer.—1. Toxic reactions have not been reported from 2 mg. of menadione daily. It is unlikely that it will be of any benefit if the prothrombin is normal.

The amounts of A and D indicated are well below the toxic level (Park, E. A.: The Therapy of Rickets, The Journal, Aug. 3, 1940, p. 370. Tumulty, P. A., and Howard, J. E.: Irradiated Ergosterol Poisoning, *ibid.*, May 16, 1942, p. 233) and should not produce adverse effects in the case described in the query. However, the usual preventive dose of vitamin A is 5,000 U. S. P. units daily, being increased to 50,000 daily if evident deficiency exists. One thousand U. S. P. units of vitamin D daily should be adequate for either prevention or treatment in this case.

2. It has been shown beyond any question that vitamin K will correct the hypoprothrombinemia which develops in newborn babies (Quick, A. J.: Vitamin K for the Newborn, The Journal, March 21, 1942, p. 999) and is probably effective in reducing the incidence and severity of hemorrhages in these babies (Hellman, L. M., and Shettles, L. B.: *South. M. J.* **35**:289 [March] 1942. Williams, R. E.: *Canad. M. A. J.* **52**:397 [April] 1945).

The dosages are correct. It may be desirable to repeat the dose for several days in the babies (Vitamin Deficiencies, The Journal, June 22, 1946, p. 667). There is no known danger from the procedure.

Harm would probably not result from using 5 mg. doses. Amounts many times this large have been given to adults for considerable periods with insignificant toxic reactions (Allen, J. G.: *Am. J. M. Sc.* **205**:97 [Jan.] 1943. Shapiro, Shepard, and Richards, R. K.: *Ann. Int. Med.* **22**:841 [June] 1945).

DERMATITIS FROM PLAYING CARDS

To the Editor:—What chemicals in the finishing of playing cards might produce a contact dermatitis?
John T. Leland, M.D., Mill Valley, Calif.

Answer.—The ordinary playing cards are made of paper and stiffened with sizings. Sizings may be any of the natural or synthetic resins or such substances as sodium silicate. Any of the synthetic resins, if they are not completely cured, may cause sensitization dermatitis. Of the natural resins, rosin is the best known sensitizer. Sodium silicate, water-glass, has not been reported as the cause of sensitization dermatitis.

Within the past few years there have appeared on the market washable playing cards which are made of synthetic plastics. If these are incompletely cured they may cause dermatitis, just as may the synthetic resin sizings. In instances in which the dye comes off the playing cards, it is possible that some one may be sensitive to such dyes.

To contract dermatitis from playing cards would be unusual, because contact dermatitis rarely, if ever, occurs on the palms and palmar surfaces of the fingers (places coming in contact with the cards) because of the many layers of cornified epithelial cells covering the true skin in these areas. A diagnosis of dermatitis due to handling playing cards would have to be corroborated by positive patch tests with the playing cards.

ALOPECIA AREATA

To the Editor:—A man aged 44 sought medical care in November 1944 because of a feeling of unusual fatigue and lack of stamina. His doctor prescribed intravenous thiamine hydrochloride injections, daily applications of methyltestosterone, amphetame sulfate (5 mg. twice daily) and vitamin C. About the middle of January 1944 (after about twenty-five applications of methyltestosterone, fifteen amphetame tablets and a number of thiamine injections intravenously) the patient awoke one morning to find his pillow covered with loose hair. On rubbing his face he could feel the stubble of his beard come loose in his hands. After this shocking episode he continued to lose hair from his entire body. In one week there was a complete total alopecia. Since then the patient has been treated by a dermatologist, who prescribed a high acid ash diet and administered roentgen treatments to the scalp (75 roentgens) and grenz ray treatments. He has also received twelve injections of chorionic gonadotropin and a variety of tonics and shampoos, all without effect. Repeated laboratory tests have been normal, including serologic tests for syphilis. The loss of hair has affected the patient's mental state. He borders on desperation unless some relief or hope of relief can be given. Chemical substances which may cause alopecia have been ruled out. Advice as to treatment will be appreciated.
M.D., California.

Answer.—The patient described in the query has developed a universal alopecia areata. The cause is unknown. The earlier therapy given for the fatigue undoubtedly is not related to the loss of hair. The treatment should be both general and local as well as psychiatric. Wearing a wig helps the patient's morale. The use of tonics and B complex preparations has been recommended. The blood should be examined for the need of hematinics, and any other abnormality of the body should be sought for and corrected. Thyroid has been recommended, as well as agents which are antispasmodics. Local therapy usually includes one or several irritants, but these cannot be employed in this case because of the widespread nature of the ailment. The scalp alone could be treated with them. Liquefied phenol is applied over small areas and quickly neutralized with alcohol.

Generalized exposure to ultraviolet light may be useful in suberythema doses and somewhat larger doses for the scalp. Filtered x-rays to the cervical and other parts of the spine may be tried. The prognosis is poor in these generalized alopecies, especially in a man of middle age.

TENTORIAL TEAR

To the Editor:—How is a tentorial tear resulting from a birth injury diagnosed; and what are the possible sequelae? A diagnosis of "possible tentorial tear" was made at birth in a baby who is now 8 months old. While the entire vault of the cranium has not ossified, the baby appears normal except for an apparent lack of energy.
Captain, M. C., A. U. S.

Answer.—A positive clinical diagnosis of a tentorial tear is not possible. Such a tear of and by itself is not important, but the hemorrhage and associated cerebral damage may be. The only way in which this can be evaluated is by close observation and examination for evidence of cerebral involvement. The longer a child continues to "appear normal" without evidence of cerebral injury, the less likely does any serious injury at birth become.

TYPHUS IMMUNIZATION FOR PAN AMERICAN HIGHWAY TRIP

To the Editor:—Is it advisable to immunize a person going to Mexico, Central America and South America along the Pan American highway against endemic typhus, epidemic typhus or both?
Regina S. Greenebaum, M.D., Chicago, Ill.

Answer.—A person contemplating a trip to the areas mentioned in the query should be vaccinated against epidemic, or louse borne, typhus. Vaccination against endemic, or murine, typhus is not considered necessary.

CHICKEN PICKER'S DERMATITIS

To the Editor:—Several people who are employed at chicken picking have had an eczematoid type of dermatitis involving especially the hand and arm nearest the line of chickens. Please discuss this type of occupational disease.
John R. Morrison, M.D., Carroll, Iowa.

Answer.—Dermatitis among the handlers of chickens and other types of fowl is not uncommon.

Animal scabies may be contracted from infected domestic fowl. Animal scabies appears as pinhead size papules on the arms, thighs, groin or trunk and sometimes on the face. It may develop in a few hours to two or three days after contact and usually disappears in about three weeks after contact ceases.

Gamasoidosis, or fowl mite disease, is caused by Dermanyssus avium and gallinae. The lesions in man resemble urticarial papules and occur on the hands, forearms, and exposed portions of the neck, chest, and shoulders, and may also involve the face and scalp.

Fowl mites are prevalent on chicken farms. Persons who clean out the coops and those who handle the fowl are attacked by them. The chicken mite Laelaps stabularis may live in stables and attack horses, dogs, and stable men. The parasite may sometimes be seen as dark moving specks on the skin. They do not burrow, but nest in the sweat and sebaceous ducts which gape and become inflamed. This is followed by erythematous exudative folliculitis.

The prevention of the disease consists in wearing impervious sleeves, aprons, and rubber gloves. By applying insect repellents to the workers' clothes and exposed skin and spraying insecticides on the fowl, it may be possible to prevent the disease.

Mixtures of such insecticides and repellents as pyrethrum, DDT, dimethylthalate, Navy insect repellent #448, Indalone, or Rutgers #612 may be used in ointment bases on the skin and in solutions, emulsions or dusts for spraying the fowl.

Reference:

Schwartz, Louis and Tulipan, Louis, Occupational Diseases of the Skin, Philadelphia, Lea & Febiger, 1939, pp. 458-460.

GASTROINTESTINAL DISTURBANCE FOLLOWING MAPHARSEN INJECTION

To the Editor:—The question was asked in Queries and Minor Notes in The Journal, Sept. 14, 1946, page 117, whether there is anything to prevent a gastrointestinal disturbance arising from mapharsen administration. I agree that in a small percentage the psychic factor may play a role. However, in several large clinics which are devoted almost exclusively to the treatment of the Negro race I have seen numerous reactions in which the psychic factor is minimal. I believe that the odor of the drug plays a more prominent role in the gastrointestinal reactions. I have been using ethylaminobenzoate lozenges, following a recently published suggestion. The technic is as follows, with a slight modification: The patient places on the tongue two lozenges, each containing 1/10 grain (65 mg.) of ethylaminobenzoate, one-half hour before the injection is given. This is followed by one lozenge one-half hour after the injection is given. The purpose is to anesthetize the taste bulbs on the tongue. The results have been satisfactory, and few patients have complained of gastrointestinal reaction. I agree that other factors may be contributory.
Meyer L. Niedelman, M.D., Philadelphia.

To the Editor:—In regard to the item in Queries and Minor Notes entitled "Gastrointestinal Disturbances Following Mapharsen Injection" which appeared in The Journal, Sept. 14, 1946, page 117, may I suggest that, while treating a considerable number of servicemen overseas in a venereal disease clinic where for a time we employed mapharsen daily on a twenty day schedule of rapid treatment, this problem frequently arose. Two procedures were adopted which for the most part eliminated the distress of gastrointestinal disturbances in patients who had such reactions: routine administration of atropine sulfate 1/150 grain (0.4 mg.) given one-half to one hour prior to mapharsen therapy, and also the administration of 100 mg. of ascorbic acid three times daily. The latter we felt might in some degree protect against pruritus and the more remote possibility of dermatitis medicamentosa. We never knew whether it did or not, for such reactions did not develop in about 500 cases thus treated with rapid arsenotherapy. At any rate those with gastrointestinal disturbances became few and far between and were usually easily controlled.
Thomas T. Jones, M.D., Durham, N. C.

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ROENTGENOLOGIC DIAGNOSIS

Changes Resulting From Chemotherapy

ARTHUR C. CHRISTIE, M.D.
and
GEORGE M. WYATT, M.D.
Washington, D. C.

Roentgenologic diagnosis is based on the interpretation of variations in gross pathologic conditions as they are recorded on the roentgenogram or depicted on the fluoroscopic screen. There are certain criteria on which a fair degree of reliance may be placed in making diagnoses of infectious processes. Not only may these changes due to infection be recognized, but frequently sound judgments may be made in regard to the stage of the infectious process, and by successive examinations a fairly accurate idea may be gained of the progress of the disease and its probable outcome.

In the interpretation of roentgenologic observations in infections consideration must be given to the possible modifying effects of any therapeutic measures which have been used. Hitherto there was usually little difficulty in evaluation of the changes in the roentgenologic-pathologic picture resulting from therapy. This is no longer true since the advent of the sulfonamide compounds, penicillin and allied products. These drugs have not only profoundly modified the clinical aspects of infectious diseases but produced significant changes in the pathologic-anatomic manifestations, with a resultant change in their roentgenologic-pathologic appearance.

Never before has the body been called on to handle a situation in which there has been complete or partial arrest of an infectious process by the artificial killing or attenuation of the infecting organisms in situ. When all of the organisms have been killed, the resultant tissue responses and their roentgenologic manifestations present new phenomena. This is also true to a lesser extent when the organisms are abruptly attenuated and an active acute infection transformed into a low grade chronic state. These changes must be kept in mind and given careful consideration in the interpretation of roentgenologic observations. This is especially important in view of the common and widespread use of these new drugs in treatment against infections.

The following cases, with brief histories and accompanying roentgenograms, are presented for illustration and emphasis of the necessity for giving special attention to the diagnostic problems which may be encountered:

REPORT OF CASES

Case 1.—A white boy aged 4 was admitted to the hospital Oct. 15, 1944 during an attack of pustular chickenpox, the eruption of which appeared October 10. His temperature was 104 F. from October 12 to 15. On October 14 his right wrist had become swollen, red and extremely tender. He was placed on a regimen of parenterally administered penicillin on admission, receiving a total of 1,510,000 units over a period of eleven days. The acute tenderness and swelling began to subside on the second day, and within a week little tenderness remained. After the second week the only clinical residuum consisted of slight limitation of motion of the wrist, and this also had disappeared at the end of one month. The patient remained asymptomatic thereafter. A roentgenogram taken two days following the onset of symptoms did not show abnormality of the bones. There was edema of the soft tissue about the entire circumference of the distal ends of the radius and ulna, an observation which was considered consistent with early osteomyelitis. A film taken two days later showed a small area of osseous destruction with a break in the cortex, forming a cleft in the extreme distal ventral aspect of the radius. A definite diagnosis of osteomyelitis was made at this time. Figure 1 demonstrates the healing process of osteomyelitis. Eleven months following the onset only a scar remained at the site of the original disease. The bone which had grown beyond this scar appeared normal.

This case illustrates the manner in which the body handles osteomyelitis in which the organisms have been killed by adequate penicillin dosage during the early acute stage of the disease. The series of films presents a fairly complete and understandable picture. If, however, a single roentgenologic examination had been made at one of the stages in which subperiosteal bone was present, interpretation would have been rather difficult as based on the manifestations of osseous infection before the advent of chemotherapy.

Case 2.—A Negro woman aged 24 was well until about Dec. 28, 1944, when "tonsil infection" developed, as she was told by her physician. About two weeks following this infection a sudden severe, sharp, continuous pain developed in her right thigh just above the knee. This later extended up the thigh almost to the hip. About three weeks later she was still complaining of pain and tenderness. At that time her temperature was 99.6 F. She had a leukocytosis of 18,800 with 70 per cent neutrophils and a sedimentation rate of 27 mm. by the Wintrobe method. Roentgenologic examination of the right femur at that time showed no abnormality whatever. The patient was given 18 Gm. of sulfadiazine over a period of forty-eight hours. She did not report again until March 21, 1945. Roentgenologic examination of the right femur at that

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Formerly Major, Medical Corps, Army of the United States (Dr. George M. Wyatt).

Read before the Section on Radiology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

From the x-ray section of Walter Reed General Hospital, United States Army, and the Radiological Clinic of Drs. Groover, Christie and Merritt.

time (fig 6 *A* and *B*) showed extensive motheaten osseous destruction involving the entire shaft of the right femur with elevation of the periosteum and a deposit of subperiosteal new bone. The white blood cell count was 10,000 with 73 per cent neutrophils and a sedimentation rate of 30 mm by the Wintrobe method. The patient refused to submit to a surgical procedure She was admitted to the hospital and 1,600,000 units of penicillin were given parenterally over a period of eight days. The pain and tenderness slowly disappeared, and at the end of two months she was practically symptom free. She was last seen Jan 18, 1946, at which time she complained of occasional pain in the right thigh but was otherwise well A roentgenogram taken at that time (fig 6 *C*) showed apparently complete healing of the osteomyelitis with decided thickening of the cortex of the femur

This case illustrates a more advanced stage of osteomyelitis, in which treatment was started later. The final appearance is more that of osteitis deformans than that of any other entity. The irregular osseous destruction and sequestration due to chronic osteomyelitis which was seen in earlier roentgenograms is not present.

Case 3—A white man aged 28 was first seen elsewhere in February 1944, at which time a diagnosis of nasal accessory sinusitis was made and he was placed on a regimen of sulfanilamide therapy for twelve days The sinusitis subsided On March 28, 1944 he was again seen with symptoms of dull aching pain in the anterior portion of the left thigh and with radiation of the pain to the knee The symptoms subsided with rest, but in August 1944 the pain returned and a small mass was noted in the upper posterolateral portion of the left thigh A roentgenogram made at this time was the basis for a diagnosis of osteogenic sarcoma (fig 2). There was an increase in the density of the mid shaft of the femur with almost complete obliteration of the medullary canal and proliferation of new bone about the periphery of the femur with spicules radiating into a soft tissue mass The appearance simulated that of osteogenic sarcoma There was, however, a sharply defined 8 by 13 mm. oval area of diminished density in the shaft at the lower margin of the lesion which did not have the appearance seen in cancer and represented a cortical abscess A surgical operation was performed Sept 12, 1944 and disclosed a soft mass composed of granulation tissue located adjacent to the posterolateral aspect of the mid femur, with a sinus tract measuring ½ inch (1 27 cm.) in diameter extending into the bone Free pus was present in the sinus tract The patient was placed on intensive penicillin therapy, and subsequent roentgenologic examination revealed that the new bone had begun to assume normal architecture

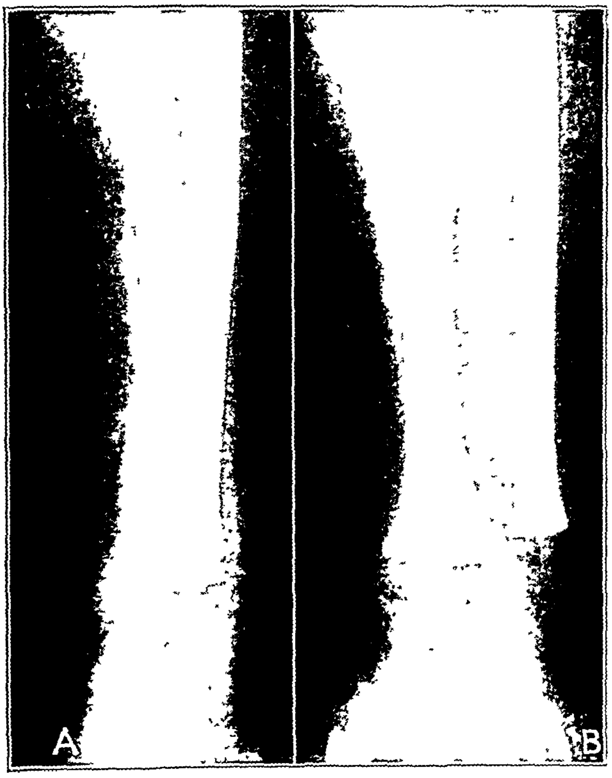

Fig 1 (case 1) *A*—There is a small deposit of new bone beneath the elevated periosteum *B* One and one half months following onset the subperiosteal new bone has assumed a nodular form A diagnosis of osteogenic sarcoma might be made if this were the only examination

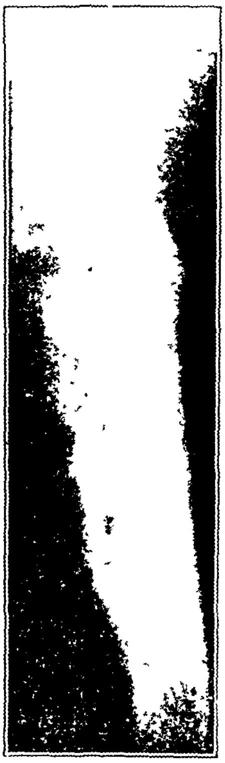

Fig 2 (case 3)—Lateral view of the femur

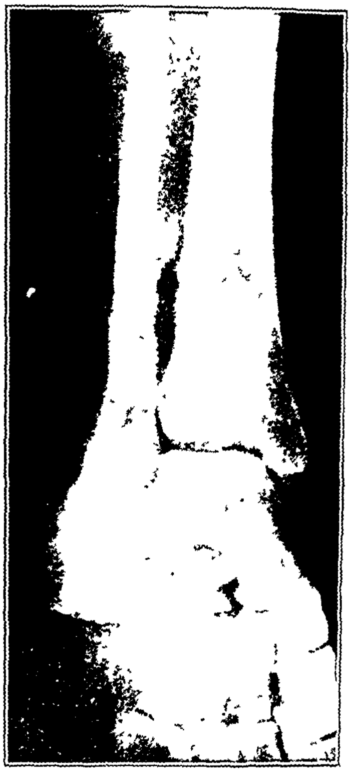

Fig 3 (case 5)—Oblique view of the distal part of the ankle and leg showing slightly irregular subperiosteal new bone with a knoblike projection of new bone toward the tibia This knob is higher in position than an exostosis, which it simulates Similar bony projections have been seen in 2 other cases similarly treated The general appearance is much like that of syphilitic periostitis and angioendothelioma

This illustrates a circumstance which will probably become increasingly frequent with the more widespread use of chemotherapy. The amount of sulfanilamide administered was sufficient to control the sinusitis, but larger doses and more prolonged administration are required to control infection of bone. It may be assumed that the osseous infection in this instance occurred at the time of the sinusitis, since there was no history of infection elsewhere. Symptoms of the infection of the bone did not occur, however, until after a lapse of over a month, and even then the process was an extremely low grade one The roentgenologic appearance is extremely bizarre, and the diagnosis of osteogenic sarcoma is understandable It seems reasonable to assume that the prolonged course and unusual roentgenologic picture is the result of definite attenuation of the infecting organism by inadequate chemotherapy.

Case 4.—A white man aged 24 was first seen elsewhere in October 1945 and was treated with sulfanilamide for an upper respiratory infection, which subsided About one month later he noticed pain and tenderness in the calf of the right leg; the symptoms were aggravated by walking. They increased in severity, and in December 1945 he was admitted to a hospital. A roentgenogram made at that time revealed essentially the same conditions as those seen on Jan. 14, 1946, when there was a sharply defined area of osseous destruction involving the lateral aspect of the cortex of the mid portion of the fibula for a distance of 4 cm. The lesion was expansile in character and had fairly smooth margins. In the center of the lesion there was a 1 by 8 mm. vertical spicule, which had the appearance of a sequestrum. The lesion as a whole, however, was not characteristic of any particular entity. In appearance it simulated fibrous displasia more than any other disease. The original diagnosis was possible bone cyst and the second, cortical bone abscess modified by chemotherapy.

The lesion was resected, and its histologic appearance was that of healing osteomyelitis.

CASE 5.—A white woman aged 44 first noticed pain and swelling of her right ankle in July 1945. The history did not disclose any preceding illness, infection or injury. She was seen elsewhere and treated with penicillin by mouth, sulfonamide compounds and diathermy. The exact dosages are not known, but from the patient's history the chemotherapy was neither intensive nor prolonged.

The symptoms abated, but after a few weeks they became progressively more severe. She reported to another physician, who requested the roentgenogram taken April 18, 1946 (fig. 3). A diagnosis of osteoperiostitis modified by chemotherapy was made, and she was admitted to the hospital. The Wassermann test was negative. The sedimentation rate was 16 mm. by the Cutler method. She received 1,475,000 units of penicillin parenterally over a period of eight days. She gradually improved and became practically asymptomatic two months after treatment.

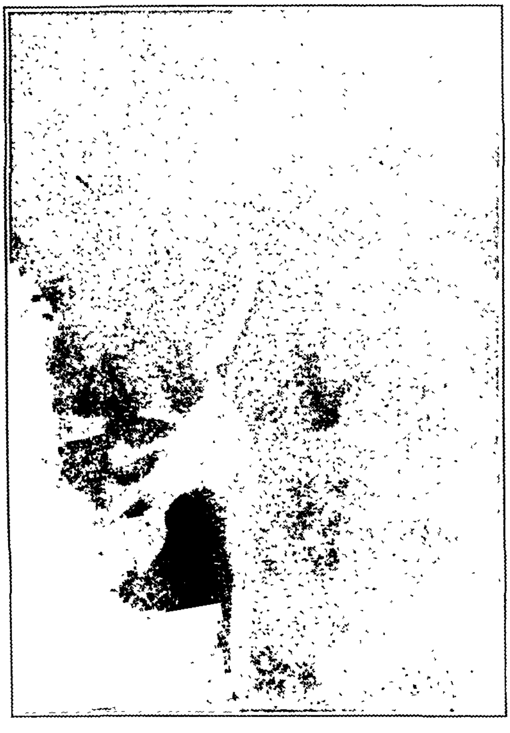

Fig. 4 (case 6).—Pyelogram taken in Germany on Aug. 11, 1944 showing enlargement of the upper pole of the right kidney and a slight pressure deformity of the upper calyx.

This case again illustrates the effect of inadequate treatment on infection; in this instance the method of treatment was the oral administration of penicillin, which requires such huge doses in order to be effective that the cost of the oral method is still prohibitive in most patients. The roentgenologic picture strongly resembles syphilitic periostitis except for the knob of bone projecting toward the tibia. This "knob" has been seen in 2 other cases similarly treated. Except for the knob the possibility of angioendothelioma should be considered.

Confusion has long existed in the differential diagnosis roentgenologically between tumor and syphilis in both bone and soft tissue. The same confusion now extends to any infection which has been altered by chemotherapy or penicillin.

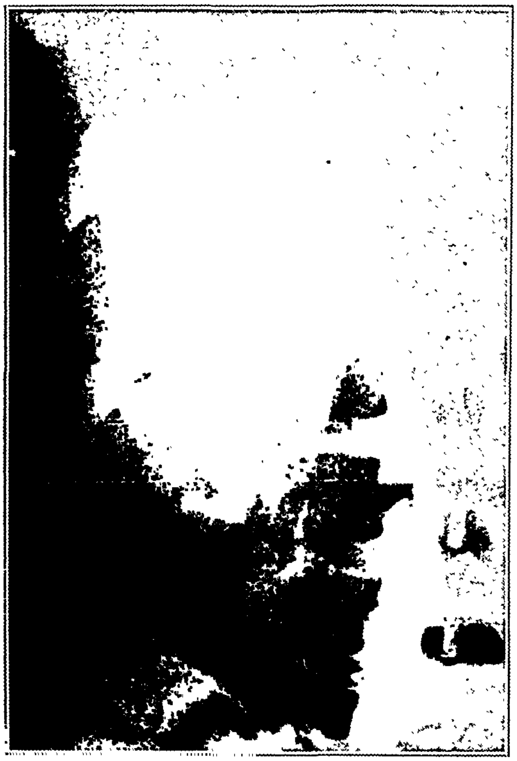

Fig. [illegible]).—Pyelogram taken Sept. 15, 1945 showing extensive pressure deformity of the calices of the right kidney from a mass either in or adjacent to its upper lateral portion. This film also shows a narrow line of diminished density along the adjacent margin of the liver which has the appearance of gas. The right kidney is fixed in position, and the right side of the diaphragm limited to about one-half the excursion of the left. The appearance is that of a perinephritic abscess, part of which is probably within the renal capsule, with gas in the soft tissues peripheral to the kidney.

CASE 6.—A white man aged 23 [1] was admitted Sept. 13, 1945 complaining of general malaise and a slight elevation of temperature to 99 F. in the evenings. Physical examination revealed a hard, fixed mass in the right upper quadrant of the abdomen. The patient had complained of abdominal pain on the right side intermittently for two years. Prior to this he had an attack of carbuncles which cleared spontaneously. At the time of, or shortly after, the carbuncles he contracted gonorrhea for which he received 200,000 units of penicillin. During part of the prolonged chronic illness the patient was a prisoner in Germany, at which time the first roentgenologic examination was carried out (fig. 4). A diagnosis was not made at this time. In the interval he lost 40 pounds (18 Kg.). The first diagnosis on subsequent examinations after the patient's return to the United States was renal tumor. The final diagnosis at the last examination (fig. 5) was perinephritic abscess, based on the presence of gas within the mass. A surgical operation was performed Sept. 18, 1945. A tremendously thick, hard mass of scar tissue was encountered in the region of the upper pole of the right kidney. When an incision was made through this scar tissue a large perinephritic abscess was opened and approximately 1,000 cc. of light green pus was evacuated.

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[1] Lewis, L. G.: Diagnosis of Perinephric Abscess, S. Clin. North America 26: 357 (April) 1946.

This case illustrates the effect of inadequate penicillin therapy on an abscess of the soft tissue, the presence of which was unsuspected. Perirenal abscesses may be extremely chronic, but certainly two years is an unusually long duration. The abscess evidently began as a cortical abscess of the kidney, and its extremely slow growth resulted in a large, hard inflammatory renal and perirenal mass with decided distortion and compression of the renal calices simulating tumor or cyst

SUMMARY AND CONCLUSIONS

1. Roentgenologic diagnosis is based on gross pathologic variations from normal in tissues which are visible by roentgen ray.

2. Through experience, the changes produced by infection had become known and their various stages catalogued to such an extent that not only diagnosis but prognosis was possible.

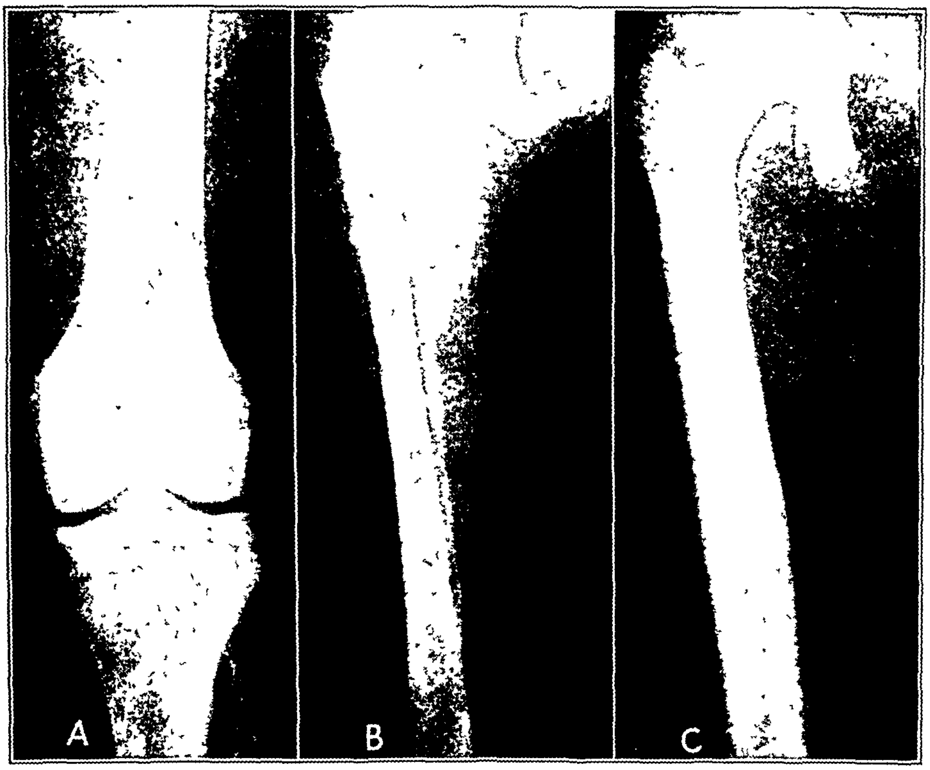

Fig. 6 (case 2) —*A*, there is an area of moth eaten osseous destruction involving a 6 cm length of the distal shaft of the femur, with new bone beneath the elevated periosteum extending upward from this area *B*, view of the remainder of the femur taken on the same date as *A* The entire shaft of the femur is involved by irregular destruction largely limited to the outer aspect of the cortex The whole is surrounded by subperiosteal new bone which is slightly laminated in character. *C*, seven and one half months later there is no roentgenologic evidence of active infection. The cortex is extremely thick, and its appearance simulates that of osteitis deformans

3. The sulfonamide compounds and penicillin have altered not only the clinical but the pathologic anatomic aspects of infection.

4. The most significant and previously unknown condition which results from inadequate treatment with these agents is that infection, the activity of which has been arrested completely or partially by artificially killing or attenuating the infecting organisms, leaves the tissues of the body to dispose of the resulting debris.

5. Body tissues have never been called on to handle such a situation. This altered reaction to injury of the body tissue by infection often simulates neoplasm and, as has been demonstrated, may be easily confused with cancer, syphilis and other conditions.

6. Chemotherapy is so commonly used that its effect must be kept in mind and investigated whenever an unusual roentgenologic or clinical observation is made.

ABSTRACT OF DISCUSSION

Dr L H. Garland, San Francisco: The antibiotics can sterilize a bone or soft tissue infectious process in midflight and leave the gross pattern of disease to confuse the clinical radiologist Drs Christie and Wyatt remind us once again that bacterial diagnosis is seldom possible by individual roentgenologic examination and that the newer drugs make even the diagnosis of active inflammation difficult. Their observations emphasize the fact that we are dealing in shadows of gross processes and that we tend to "overread" those shadows. Intelligent roentgenologic examination of diseased tissue (notably of bones and joints) requires that the interpreter have some information concerning the principal symptoms or clinical signs which happen to be present plus some facts on the medicaments administered to date Without these facts the most expert radiologist may be led to erroneous conclusions. I have seen a sequence of events similar to those noted in case 1 in a few cases of mild infection of the long bone treated with roentgen radiation They represent fairly prompt healing (and might have eventuated even without the small doses of irradiation given) The authors use the adjective "apparent" before the word "healing" in describing the final roentgenologic appearance in case 2 . This is important It is known that infection may be suppressed but not destroyed in some patients treated with antibiotics. The gross appearance becomes encouraging, only to break down at a later date The florid or productive type of osteoperiositic lesions seen in case 3 may simulate osteogenic sarcoma or vice versa I have seen cases of bone tumor in which needle or incisional biopsy gave no definite evidence of tumor I wonder if the authors would not diagnose case 6 as a carbuncle of the kidney, later followed by a perinephric inflammatory mass The interpretation of the radiolucent zone as gas is open to question The authors have probably seen some cases of mastoiditis in which sulfonamide or penicillin medication profoundly modified the roentgenologic appearance. To me this is one of the most perplexing phases of this question We are indebted to Drs. Christie and Wyatt for reminding us that criteria for the diagnosis of disease from roentgen shadows are, like so many other clinical phenomena, highly evolutionary and changeable but nonetheless simple and clearcut provided the basic factors of roentgenologic interpretation are constantly borne in mind

Dr Lowell S Goin, Los Angeles: I dissent from the statement that syphilis is the only lesion that can be confused with bone tumor In my experience angioendothelioma is always confused with infectious disease, and osteogenic sarcoma is frequently the same When the body is invaded by bacterial infection, it summons all its natural resources and alterations in the local and general behavior of the body begin at once. All the usual pathologic changes that accompany infection are found. The bacterial invasion overwhelms the patient, nature overwhelms the infection or the balance is such that neither is quite successful, and we encounter such states as long-standing chronic osteomyelitis If large amounts of antibiotics are given a patient and the bacterial infection is suddenly overwhelmed, we find we do not have the complete alteration in the roentgenologic appearance of the repair processes that we would expect, and this is what leads to confusion. There are only two changes in bone which can be recognized by roentgenologic examination—bone destruction and bone production. It is a recognition of these two changes and the summation of their variance on which the diagnosis of all bone disease rests. If some alteration occurs that changes the character of the destruction or production, prevents the production to the point where it would have been expected or limits the amount of destruction that occurs, then we have the confusing pictures that the authors have drawn to our attention.

Dr. George M. Wyatt, Washington, D. C.: I want to emphasize the main point we are trying to get across, namely to be on the lookout for these inadequately treated patients. You will notice that these patients were cured after they received adequate treatment, and what we must think about is the welfare of the patient. In regard to the kidney case, the diagnosis was renal cortical abscess followed by perirenal abscess. In regard to syphilis there has been for a long time confusion between the changes seen in syphilis, angioendothelioma and other bone tumors, whereas previously we only occasionally ran across a low grade infection which simulated both syphilis and tumor. Now with the modification of infections by chemotherapy we are going to see this similarity with increasing frequency.

ALLERGY TO VIRUS AND RICKETTSIAL VACCINES

I. Allergy to Influenza A and B Vaccine in Children

BRET RATNER, M.D.
and
SAMUEL UNTRACHT, M.D.
New York

One of the sound principles of allergy is that whenever the host is the recipient of a foreign substance, repeated invasions may result in a hypersensitivity to that substance. It follows, therefore, that the introduction of virus and rickettsial vaccines prepared from cultures grown in chick embryonic tissues must carry in its wake the phenomena of allergic reactivity. An intriguing aspect of the allergy induced by these vaccines is that the allergenic components responsible for these reactions are related to egg-chicken proteins, substances common to the diet.

Approximately 10 per cent of allergic persons are sensitive to egg and its related proteins. If the allergic population comprises 10 per cent of the total population, then 1 per cent of the general population is sensitive to egg in varying degrees. This sensitivity is spontaneously acquired through ingestion. With the advent of these newer vaccines, millions of persons have already had egg proteins introduced into them parenterally. It is possible that through this novel method of introducing a food protein, some persons may later become hypersensitive to egg-containing foods. Stull [1] has already demonstrated such an instance.[2]

The following general types of vaccines are considered in this paper: (1) yellow fever vaccine, grown on chick embryo tissues; (2) equine encephalomyelitis vaccine, grown on chick embryo; (3) typhus vaccine, grown on chick yolk sacs; (4) Rocky Mountain spotted fever vaccine, grown on chick yolk sacs (the last mentioned has also been made from combined yolk sac and chorioallantoic membranes—a so-called membrane vaccine), and (5) influenza A and B, grown in chick embryo chorioallantoic fluid.

ANAPHYLACTOGENIC PROPERTIES OF EGG-CHICK EMBRYO VACCINES

Well defined local and systemic reactions, terminating fatally in some instances, have been reported by Schoening [3] in horses after reinjection of equine encephalomyelitis vaccine. Similar observations were made by Wolfe and Trum [4] and by Graham.[5] Wolfe and Trum also observed apparently typical desensitization following recovery from anaphylactic shock. Because of allergic reactions, Schoening and his co-workers [6] suggested that vaccination be made by the intradermal route with small volumes of the vaccine. Satisfactory results have been reported from the use of this procedure.

Van der Scheer, Wyckoff and Bohnel [7] showed that guinea pigs can be sensitized with equine encephalomyelitis vaccine and fatally shocked on receiving a second inoculation. However, when Rocky Mountain spotted fever vaccine prepared from combined yolk and chorioallantoic membranes according to the method of Cox [8] was used for sensitization, they were unable to produce anaphylactic shock in the animals.

So far as ability to produce anaphylaxis in guinea pigs can be taken as a measure of capacity to sensitize man, it would appear that a vaccine grown on membrane can be administered with less danger of reaction than can a vaccine grown on entire embryo. Vaccines grown on membrane, such as typhus vaccine, contain less tissue than equine encephalomyelitis vaccine made from chick embryo, for even large amounts of the former did not produce a reaction, whereas a twenty-fold dilution of the latter was still an effective agent.

These experiments of van der Scheer and his associates indicate that vaccines grown on membrane (typhus and other rickettsia) are preferable to those grown on entire embryonic tissue, so far as sensitization is concerned. This fully corroborates the studies of Cox,[9] who also failed to induce sensitivity with Rocky Mountain spotted fever and typhus vaccines grown on membrane. Coulson and Stevens [10] showed that suspensions of washed rickettsial bodies contain egg antigens, but in a much lower concentration than that present in the egg yolk sac. Their studies indicated that such suspensions contain egg antigens in quantities which are near the minimum sensitizing dose.

Berge and Hargett,[11] employing yellow fever vaccine and crude extracts from normal chick embryos, found that in guinea pigs chick embryo extract from 10 day or younger embryos is weakly anaphylactogenic, while that from 14 day embryos is highly so. They suggested the use of younger embryos in preparing vaccine in order to reduce the anaphylactogenicity of these biologics.

From the Department of Pediatrics, New York University College of Medicine.

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[10] Coulson, E. J., and Stevens, H.: II. Anaphylactogenic Properties of Typhus Fever and Equine Encephalomyelitis Vaccine, J. Immunol. **53**: 321, 1946.

[11] Berge, T. O., and Hargett, M. V.: Anaphylaxis in Guinea Pigs Following Sensitization with Chick Embryo Yellow Fever Vaccine and Normal Chick Embryos, Pub. Health Rep. **57**: 652, 1942.

Further pertinent data on the anaphylactogenic properties of chick-egg vaccines is offered by Coulson and Stevens.[10] In general, the principal antigenic constituents in egg yolk sac vaccines, e. g., typhus vaccine and chick embryo vaccines, e. g., equine encephalomyelitis vaccine, are identifiable with antigens of fresh egg. Comparison of the anaphylactogenic activity of equine encephalomyelitis and typhus vaccines shows that, on the basis of protein nitrogen content, they are about equal in sensitizing capacity. On the other hand, the shocking capacity of equine encephalomyelitis vaccine is appreciably less than that of typhus vaccine. Coulson and Stevens attribute this to the heavier aggregation of the former vaccine's components, which serves to reduce the rapidity of absorption.

The sensitizing capacity of these two types of vaccines on a protein nitrogen basis, was found to be about one half that of egg white, and their antigenicity was related principally to the fresh egg white. These investigators found evidence that both typhus and equine encephalomyelitis vaccines contain antigens with specificity differing from that of egg white; but there was a lack of evidence that either vaccine contained antigen with specificity differing from that of combined egg white and egg yolk. Therefore, alteration of specificity of fresh egg proteins accompanying the organization of the protein into embryonic tissue during incubation could not be demonstrated.

These authors suggest that the results of their studies signify a possible hazard to potentially allergic persons and a definite hazard to those who are highly hypersensitive to egg proteins.

From the foregoing it would seem that chick embryo and embryonic fluids are highly antigenic and that vaccines grown on membrane and young embryo have a reduced anaphylactogenicity. Dr. Herald R. Cox[12] stated to one of us that if experience with reactions required it more of the antigenic material could be extracted.

HYPERSENSITIVITY REACTIONS TO VIRUS AND RICKETTSIAL VACCINES IN THE HUMAN SUBJECT

Eaton and Meiklejohn[13] in a series of 1,791 persons who received influenza vaccine noted but 3 cases of allergic reactions. In 1 patient a severe attack of asthma occurred within three hours after inoculation. A prior history of allergy was lacking. Urticaria developed in the second patient, and in the third, a probable urticaria.

Sulzberger and Asher[14] have reported 3 cases in which there is evidence for the assumption that yellow fever vaccine induced reactions: In 2 patients it resembled mild serum sickness, with urticarial and erythema multiforme eruptions occurring six and seven days, respectively, after injection; in the third there was a similar but accelerated reaction occurring in thirty-six hours. The cutaneous manifestations were accompanied by general malaise, pains in the joints, headache, fever, pruritus, nausea and vomiting. These observations indicate that this vaccine may potentiate hypersensitivity.

Swartz[15] has recorded a case of a severe constitutional reaction to a single immunizing injection of a mixed yellow fever and cholera vaccine occurring in a person aged 27. Less than five minutes after the injection the following symptoms ensued: blurred vision, labored breathing, nausea, vomiting, diarrhea, generalized urticaria and edema with increasing dyspnea, followed by unconsciousness. Symptomatic therapy with ephedrine and epinephrine resulted in a gradual abatement of symptoms, which finally subsided after six days. Two days later dyspnea and urticaria of a milder degree recurred, lasting for a period of two weeks. The patient's history disclosed that at 4 years of age he was fed large quantities of egg and egg white during an illness. From that time on, he was unable to eat eggs. He not only had an aversion to them, but the ingestion of the smallest amount of egg-containing food precipitated severe asthmatic paroxysms. He also was hypersensitive to other foods as well as to feathers.

Positive reactions to skin tests with allergenic preparations included a persistent and pronounced sensitivity to egg and chicken. Clinical tests performed on the patient with egg and chicken meat reproduced the symptoms previously described. His serum passively transferred sensitivity to the skin of normal recipients. Egg transferred 4 plus; chicken meat, 2 plus and yellow fever vaccine, 2 plus.

Since a virus is not known to be reaginogenic to produce cutaneous reactions of the immediate variety, Swartz has deduced that it was the culture medium fraction of the yellow fever vaccine that called forth the reaction. The fact that the skin test with cholera vaccine was negative contributes further to the conclusion that the allergic reaction must be related solely to the culture medium of the yellow fever vaccine.

Swartz expressed the opinion that so far as the egg white at all times caused stronger reactions than the chicken meat, this fact militates against the assumption of Berge and Hargett (given previously) that the age of the chick embryo has a direct bearing on the power to produce anaphylactic sensitization. If the assumption were correct, Swartz reasoned, the reactions would be related more closely to the chicken meat than to egg white.

This case vividly illuminates the importance of determining whether the recipient of this type of vaccine is hypersensitive to egg before proceeding with an injection.

Roth[16] has reported 9 cases of allergic reactions to typhus vaccine. Only 4 of the allergic reactors gave a history of allergy to egg, demonstrating that history alone is not a reliable criterion.

A typical case that Roth reported in a soldier aged 19 is here recounted. Immediately after the first injection of typhus vaccine the patient had extreme dyspnea, cough, weakness and substernal pressure. He had a temperature of 97.4 F., a pulse rate of 128 and a weak respiratory rate of 24. His skin was cyanotic and covered with an urticarial eruption; his face was edematous; his lungs were filled with asthmatic rales. The patient recovered in four days. Three days later, he was given 0.1 cc. of typhus vaccine, and a severe asthmatic attack followed immediately; but he did not have shock or cyanosis as before. He presented asthmatic rales, a temperature of 98.6 F., a pulse rate of 120 and a respiratory rate of 36. Recovery ensued in thirty-six hours. It is of interest that when he was profoundly affected, his respiratory rate was only 24, and later when his reaction was milder his respiratory rate was 36. This is an important criterion for the severity of an attack; the slower the respiratory rate, the greater the danger of asphyxial death. We have observed this repeatedly in guinea pigs in anaphylaxis.

Park[17] reported a reaction to the egg allergen in typhus vaccine. The patient, a British airman aged 35, was admitted to the station hospital in collapse, vomiting blood and presenting asthmatic breathing and generalized urticaria. He soon became comatose. Symptomatic treatment resulted in complete recovery by the next morning. He had received an injection of typhus vaccine fifteen minutes before the described reaction occurred. He related that he had been allergic to egg all his life. His usual reaction to egg was vomiting or, if it did not occur, edema of the lips, tongue and larynx, asthma and urticaria would follow. Never before had he vomited blood or passed into coma. Skin tests were positive to egg proteins by the scratch method and also with passive transfer tests. Park reported that his patient had received an inoculation of yellow fever vaccine about a year previously without any ill effects. Apparently he was sensitive to the yolk allergen.

A case reported by Plotz[18] concerned a soldier who had received cholera and typhus vaccine at the same time. About ten minutes afterward the patient had difficulty in breathing and almost immediately became cyanosed Artificial respiration was given, but the patient died about thirty minutes after the administration of the vaccines At autopsy, the lungs were found to be greatly distended, and they did not collapse on the opening of the chest cavity The autopsy report was that of a typical guinea pig variety of anaphylactic death

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[17] Park, R. G.: *Allergy to Egg Prepared Vaccines, Brit. M. J.* **2**: 570, 1945.

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The case of Rubin[19] is of interest because a 19 year old soldier had a moderate allergic episode occurring one and one half hours after the inoculations of typhus fever and yellow fever vaccines He attributed the reaction to an egg yolk sensitivity which this person had since childhood Rubin showed conclusively that sensitivity to egg yolk was the dominant factor This bears out the observations of Coulson and Stevens that although egg yolk and egg white have antigens common to both, they also have antigens independent of each other The test results are of interest egg white ±, egg yolk 4 plus, chicken meat 0; yellow fever vaccine 2 plus, typhus vaccine 4 plus It should be recalled that yellow fever vaccine is made from chick embryo and typhus vaccine from egg yolk sac

Plotz attempted a study to determine whether cutaneous sensitivity follows the subcutaneous inoculation of typhus vaccine in man Skin tests were performed on 180 normal persons, as follows (*a*) before inoculation with typhus vaccine, (*b*) one week after second subcutaneous dose of vaccine (*c*) two weeks after third subcutaneous dose of vaccine, and (*d*) four weeks after third subcutaneous dose of vaccine All persons who showed cutaneous sensitivity were again skin tested six, eight and twelve weeks after the course of three doses of vaccine, 1 cc each, given subcutaneously on three successive weeks

Only 1 of the 180 subjects tested before the administration of typhus vaccine gave positive reactions to all the skin test antigens employed (typhus vaccine, egg white and egg yolk) The reactions were moderate—3 cm erythema and 1 cm induration (wheal) This subject tolerated three weekly inoculations of 1 cc each of typhus vaccine given subcutaneously without systemic reaction In none of the subjects in the control group (skin tested but not given injections of vaccine subcutaneously) did skin sensitivity develop However cutaneous sensitivity developed in 9 of 150 vaccinated subjects 1, later, to egg yolk and egg white 4 to vaccine alone 2 to vaccine and egg yolk and 2 to vaccine, egg yolk and egg white In all 9 cases cutaneous sensitivity was noted four weeks after the third dose The cutaneous sensitivity became negative after twelve weeks in 7 of the cases and diminished considerably in 2 In 2 persons the cutaneous reactions remained relatively unchanged twelve weeks after the third dose These 2 subjects must have been sensitized to a greater degree than the others for they reacted to egg yolk egg white and vaccine Despite the cutaneous sensitivity all the subjects sustained a subsequent subcutaneous injection of the full dose of typhus vaccine without systemic reaction

The suggestion of Beard Finkelstein and Beard[20] that repeated vaccination with equine encephalomyelitis vaccine may sensitize man is provocative but not too clearly defined by their data In 9 persons who were revaccinated they observed symptoms of cramppy stiffness" and indefinite muscular soreness in the lower portion of the thigh Local reactions were not present at the site of the injection A test for sensitivity was not performed Although allergic reactions can ensue from this vaccine as attested to in studies with horses (Schoening Wolfe and Trum and Graham) and in the guinea pig (van der Scheer and his associates) Beard and his co workers are not justified in labeling as allergic the reactions they noted As Coulson and Stevens point out equine encephalomyelitis vaccine is heavy its absorption is slow, and the recorded symptoms may be caused by such factors, particularly in view of the large, 2 cc dose injected Allergy due directly to reinjection is an important matter, and further investigations should be undertaken to clarify this phase of the subject

Two cases recounted to us are worthy of mention Ira Rubin[21] recalled a case that he observed while in the army, of a man in his early twenties in whom asthma and generalized urticaria developed within five minutes after the injection of 1 cc of influenza vaccine subcutaneously The symptoms of asthmatic breathing and urticaria gradually disappeared after four days Supportive and symptomatic therapy were administered This patient gave a history of sensitivity to egg since childhood One year prior to admission, he was given an injection of 1 cc of typhus vaccine Within fifteen minutes he was wheezing and had generalized urticaria At that time he was also confined to the hospital for four days and received several injections of epinephrine He was warned never to take any injection of a vaccine grown in an egg medium

The second case was that of a woman a member of the Women's Army Corps aged 25, who sustained a severe anaphylactic shock of a striking character She was given 1 cc of influenza vaccine at about 1 p m and was admitted to the hospital at 2 a m the following morning Her blood pressure was 40 systolic and a questionable diastolic reading She was treated for shock and was given epinephrine and ephedrine Wheezing and urticaria were absent The one sign was the tremendously lowered blood pressure She was discharged in one week with a blood pressure of 80 systolic and 50 diastolic A history of intolerance to egg was obtained Although not all the data could be recalled, the striking situation here is that this patient in all probability suffered a canine type of anaphylactic reaction, the cardinal symptom of which is a fall in systemic blood pressure

A study was undertaken by Stull[1] to determine whether vaccines grown on chick egg yolk sac contain sufficient egg proteins to cause severe systemic reactions if given to egg sensitive subjects In this investigation, skin tests were not performed directly on egg sensitive patients because of the danger involved in possible production of systemic reactions Serums from egg sensitive subjects were used, and the antigenic specificity and activity were shown by passive transfer Prausnitz Kustner reaction tests were performed on the skin of normal recipients

These tests revealed the presence in egg embryo vaccines of egg white and yolk antigens of such quantity and specificity that their injection might produce dangerous systemic reactions in egg-sensitive recipients Stull states that the recommended immunizing dose of typhus vaccine contains about two thousand times the dosage usually considered safe for intracutaneous skin tests in allergic subjects He concluded from the result of his studies that if egg sensitive persons were given injections of typhus vaccine similar to the lot used in his study, serious immediate systemic allergic reactions might ensue

In a patient aged 33, Stull relates that a delayed allergic urticarial local reaction occurred seven days after the first injection of 1 cc of equine encephalomyelitis vaccine (local serum sickness type of reaction[14]) Two weeks later a second injection of 1 cc produced a large local reaction within one hour (accelerated reaction indicating allergy) which lasted for six days Since that time this patient has had gastrointestinal disturbances with severe diarrhea following the eating of chicken or eggs The serum of this recipient contained antibodies to egg yolk and chicken embryo but not to egg white

Two additional cases were listed in the last *Quarterly Cumulative Index Medicus* by Sprague and Barnard,[22] who report alarming reactions in 2 patients at the time they received their original inoculation One had been given yellow fever vaccine and the other typhus vaccine After these episodes, a history of clinical sensitivity to egg was obtained in both Skin tests performed later proved that they were sensitive to egg proteins and to the vaccines

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[19] Rubin S S An Allergic Reaction Following Typhus Fever Vaccine and Yellow Fever Vaccine Due to Egg Yolk Sensitivity J Allergy **17** 21 1946

[20] Beard D W Finkelstein H, and Beard J W Repeated Vaccination of Man Against Virus of Equine Encephalomyelitis J Immunol **40** 497, 1941

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HYPERSENSITIVITY REACTIONS TO INFLUENZA VACCINE, A AND B, IN ALLERGIC CHILDREN

All the cases used in the present study were those of children ranging in age from 1 to 18 years. These children were known to be allergic, were suffering from asthma, eczema, urticaria and hay fever and had been completely studied for their hypersensitivities. Each child had been tested against three hundred or more allergens. A case was not used unless the child had been under observation for several months to several years. For this reason, all these subjects were familiar to us not only through the knowledge of their protein cutaneous hypersensitivities but also through intimate knowledge of their clinical behavior toward egg and other proteins.

Those patients who reacted positively by scratch test to dry proteins (Arlington) of the egg-chicken family were regarded as positive reactors to egg. The patients whose reactions to the egg proteins were doubtful and who gave a history of intolerance to egg were further tested with egg white, egg yolk and chicken (1:500 dilution) by the intracutaneous method.

Methods and Procedures.—All subjects were given injections of 0.02 cc. of undiluted influenza A and B vaccine.[23] The tests were read immediately and at varying intervals up to one hour. A skin test was regarded as positive if the test revealed an erythema measuring at least 3 cm. in diameter and a wheal measuring at least 1 cm. or more.

TABLE 1.—*Positive Allergic Reactors to Influenza (Type A & B) Vaccine*

Case, Age	Allergic Diagnosis	Allergic Sensitiveness			Vaccine Reaction to Intradermal Injection (0.02 Cc.)		Clinical Egg Sensitivity
		To Other Than Egg Protein	To Egg White	To Related Egg Protein	Local	Systemic	
1 D. D. 4 6	Eczema, Asthma, Hay fever, Urticaria	Inhalants, pollens, dust, bacteria	Moderate positive to intradermal (1:500), negative to scratch test	None	Definite wheal; erythema 4.0 cm	None	Ingestion of egg precipitated allergic attacks, nausea
2 L. D. 9 6	Eczema, Asthma, Hay fever	Inhalants, pollens, dust, nuts, fish, bacteria, condiments	Large positive reaction to scratch test, 5 cm. wheal with surrounding erythema	Egg yolk ovovitellin (scratch test)	Large wheal 6.5 cm. with erythema	Severe asthmatic attack 2 hrs. after test; lasted through night	Sensitive to egg since infancy; cannot tolerate any food containing egg; causes attacks
3 E. D. 5 3	Asthma, Eczema, Hay fever	Inhalants, pollens, dust, peanuts, nuts, fish	Moderate positive only to intradermal test	None	Wheal and erythema 4.0 cm	None	Cannot tolerate egg containing foods
4 B. F. 3 1	Eczema	Inhalants, pollens, cocoa, vegetables, fish	Moderate positive to intradermal test	Egg yolk (scratch test)	Small wheal and erythema 3.0 cm	None	Tolerates only hard boiled egg
5 W. F. 7 5	Eczema, Asthma, Hay fever	Inhalants, pollens, fish, nuts	Positive to scratch test	Egg yolk ovomucoid, duck egg, goose egg, chicken feathers	Positive moderate wheal and erythema 4.0 cm	None	Has avoided egg for several years
6 B. H. 14 10	Eczema, Asthma, Hay fever, Urticaria	Inhalants, pollens, wheat	Positive only *to intradermal* (1:500)	None	Positive moderate wheal and erythema 3.5 cm	None	Ten years ago, strongly positive to scratch test with *egg white*, yolk, ovomucoid, goose egg, duck egg, since then well immunized; eats egg *and is regarded as tolerant to* egg; reaction relates to residual skin sensitivity which sometimes *remains for years*
7 K. H. 9 1	Asthma	Inhalants, vegetables, chocolate, bacteria	Moderate positive *only to* intradermal	Suggestive reac*tion to yolk*, chicken and feathers	Positive mod*erate wheal* and erythema 3.5 cm	None	Tolerates egg
8 M. H. 15 3	Asthma, Hay fever, Emphysema	Inhalants, pollens	Definite positive to scratch test	Ovomucoid, feathers	Moderate positive wheal and erythema, 4 cm	None	Cannot tolerate egg or egg containing foods
9 P. L. 6 0	Asthma, Hay fever	Inhalants, pollens, dust, nuts, fruit	Definite positive to scratch test	Egg yolk, ovomucoid, feathers	Strongly positive wheal (4 cm.) and surrounding erythema	Received 0.5 cc subcutaneously following the intradermal reaction. An immediate reaction of generalized giant urticaria ensued which was *followed by* asthma; the generalized reaction persisted 2 days	Has been avoiding eggs since sensitivity was determined three years ago
10 R. S. 4 1	Asthma, Eczema	Inhalants, dust, pollens	Positive to scratch test and intradermal (1:20,000)	Yolk	Wheal (3.5 cm.) and surrounding erythema (1:10) dilution vaccine	None	History of exquisite sensitivity to egg, merest contact causes severe hives, angioneurotic edema, asthma and even stupor
11 B. W. 10 8	Eczema, *Asthma*, Hay fever, Urticaria	Inhalants, pollens, dust, milk, wheat, nuts, fish, vegetables, *fruit*	Positive only to intradermal (1:500)	None	Moderate positive wheal and erythema (3.0 cm.)	None	Ten years ago positive scratch test to egg white, yolk, ovomucoid; 4 years ago treated for egg intolerance; now eats egg and to all intents and purposes is nonsensitive at present

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23. This vaccine was supplied to us by Eli Lilly and Company, through the courtesy of Dr. Horace Powell, and is prepared in the following manner. Ten day incubated eggs are injected with influenza virus types A and B. Thus seeded, the eggs are further incubated for forty eight hours, a large amount of virus developing in the allantoic fluid. By opening the embryo blood vessels, red blood corpuscles are allowed to mix in the embryonic fluids, which after they have been harvested and

(Footnote 23 continued on next page)

Control tests were done at the same time with solution of formaldehyde, 1:2000, and merthiolate, 1:40,000 in isotonic solution of sodium chloride.

Whenever a suggestive or positive reaction was obtained with the influenza vaccine in patients who had previously been negative by scratch test to dry egg and chicken proteins, further control tests were made by intracutaneous injection of 0.02 cc. of egg white, 1:500, egg yolk, 1:500, and chicken, 1:500.

I. *Positive Allergic Reactors to Influenza (Type A and B) Vaccine*

Of a total of 108 allergic children, 11 reacted positively to a test with influenza vaccine (0.02 cc. administered intracutaneously). In table 1 can be seen the detailed evaluation of these cases. In every instance in which the vaccine test was positive, the child also reacted to egg white protein. There was not a single positive reaction to vaccine demonstrated in the face of a negative reaction to egg white. This affords proof, therefore, that the positive reaction to vaccine must be related in large measure or, indeed, entirely to the presence of egg white protein in the vaccine.

In none of the remaining 97 children was a positive reaction obtained to the vaccine in the absence of a positive reaction to egg white.

In cases 2 (L. D.), and 9 (P. L.), systemic allergic reactions were induced by the injection of influenza vaccine. In the first instance, a large local reaction ensued, followed two hours later by an attack of asthma which persisted through the night. This was the only one of the 11 cases of sensitivity to egg white in which a systemic reaction developed from the small intradermal test dose of 0.02 cc. The child was known to be decidedly sensitive to egg white.

In the second case, in which the clinical and dermal sensitivity of the patient were less pronounced one-half hour after the intradermal test, which provoked a large local reaction but not a general reaction, a dose of 0.5 cc. of the vaccine was administered subcutaneously with due precaution and with epinephrine at hand. A generalized reaction occurred after this larger subcutaneous injection.

In cases 5 (W. F.) and 8 (M. H.) both patients reacted definitely to the scratch test with egg white vaccine and related egg proteins. These patients should be regarded as highly sensitive. In case 10 (R. S.), that of a girl who has had profound clinical allergic reactions from contact with egg, even to touch, an attempt to test with the full strength of the test materials was not made. She should be regarded as potentially exquisitely sensitive and perhaps would show a systemic reaction to the test in full strength.

Cases 6 (B. H.) and 11 (B. W.), are those of 2 children who ten years prior to this study were known to be extremely sensitive to egg white. Over a period of years both children were given egg white in gradually increasing doses, and both have tolerated egg in regular amounts in their diets for about eight years. Skin tests with egg white show that the two have only a residual dermal sensitivity to egg by the scratch test and only a moderately positive response by the intradermal route. The vaccine reaction was only moderate in degree. In the same category of moderate sensitivity, with probable absence of systemic reaction, can be placed cases 1 (D. D.), 3 (E. D.), 4 (B. F.), and 7 (K. H.); these patients did not react to the scratch tests and reacted only moderately to the intracutaneous (1:500 dilution) and moderately to the vaccine test.

II. *Suggestive Allergic Reactors to Influenza (Type A and B) Vaccine*

In this group of 39 patients, a doubtful reaction was obtained to the vaccine test dose. By doubtful we mean that there was not a definite wheal, and the erythema measured about 2 cm. Ten of these patients, all proved to be allergic when studied from the standpoint of other proteins to which they were found sensitive, gave suggestive reactions to various egg proteins. None of them could be regarded as clinically sensitive to egg.

TABLE 2.—*Types of Reactions to Virus and Rickettsial Vaccines*

		Allergic	Nonallergic; General
1	Onset..	Sudden and explosive	Delayed
2	Fever......	Absent	Moderate
3.	Chills..	Absent	Present
4	Local skin reaction to vaccine	Prompt wheaing or persistent erythema	Usually absent; when present, delayed, redness and swelling
5	Local skin reaction to egg proteins	Present, usually egg white	Absent
6.	Allergic manifestations	Various forms, usually urticaria, asthma and others	Absent
7	History of allergy to egg	Often present	Usually absent
8.	Clinical hypersensitivity to egg or chicken proteins	Usually present	Absent
9.	History of allergy to other substances	May be present	May be present
10	Eosinophilia	Often present	Usually absent

For example, of the 10 patients, 6 gave positive reactions to ovomucoid; of these 6, 3 showed suggestive reactions to other egg proteins, including egg white. Of the remaining 4, 1 reacted suggestively to egg yolk alone, 1 to egg yolk and egg white, 1 to egg white alone and 1 to chicken, egg yolk and egg white. None of these children gave a clinical story of sensitivity to egg.

Three children aged 7, 8 and 11 gave a history of intolerance to egg but demonstrated not even a suggestive reaction to egg protein. It is more difficult to explain the suggestive reaction to the vaccine in these cases, for the clinical sensitivity must have worn off entirely.

In the remaining 26 of this group that had a suggestive reaction to the vaccine, neither the egg test nor the history was positive. One cannot consider these reactions related to sensitivity to egg.

It must be assumed, therefore, that suggestive reactions to the vaccine are in some instances related to moderate sensitivity to egg and in other instances to sensitivity to some other ingredient in the vaccine mixture. In 4 instances, the reaction was just as large to the injection of solution of formaldehyde in the dilution of 1:2000 as it was to the vaccine.

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pooled, are subjected to lowered temperatures. The virus, adsorbed to the red blood cells, is separated from the fluid by cold agglutination of the red blood cells, then allowed to elute under raised temperature. After centrifugation, the supernatant fluid contains active virus, suspended in isotonic solution of sodium chloride and concentrated to ten times the original virus concentration of the incubated egg fluids. Inactivation is effected with addition of solution of formaldehyde 1:2000, and preservation with merthiolate 1:40,000

We lack evidence in these studies that these children could tolerate the full dose of vaccine. We have every right to assume that they would not react adversely to such an injection. This phase will be the subject of a future publication.

In a parallel series of 28 normal children who did not present evidence of allergy in any form 8 also gave suggestive reactions to the vaccine, which reaction must be attributed to some nonspecific irritant or to a possible sensitivity to the solution of formaldehyde.

Whether sensitivity to influenza virus does exist is not known. It would appear for the present that only reactions to egg proteins are responsible for the positive reaction.

III. *Negative Reactors to Influenza (Type A and B) Vaccine*

This group of negative reactors to influenza (type A and B) vaccine comprises the largest number, totaling 59 cases. These children, as did those in the preceding group, all suffered from one or more of the cardinal allergic diseases; all were thoroughly studied and reacted to allergens other than egg.

Five children in this group gave suggestive reactions to egg proteins; 3, to proteins other than egg white, such as ovomucoid, ovovitellin and egg yolk; and 3, to egg white: 1 to egg white and ovovitellin, 1 to egg white and egg yolk and 1 to egg white alone. None of these children reacted to influenza vaccine; hence they must be regarded as so insignificantly sensitive to egg white as not to react to the vaccine. The remaining 54 children were negative throughout.

COMMENT

There are apparently two types of reactions that may ensue from the administration of virus or rickettsial vaccines. The first are the general constitutional reactions characterized by moderate fever, chills, malaise and delayed onset of symptoms. They occur in persons who may or may not have a personal history of allergy and who do not show eosinophilia. These reactions can vaguely be explained on the basis of reaction to a foreign protein.

The second type, with which we are here concerned, are the allergic reactions characterized by lack of fever, by immediate or explosive onset and by one or more of the varying allergic manifestations, such as asthma, gastrointestinal symptoms, angioneurotic edema, urticaria and other rashes. These patients often have an eosinophilia and a history of allergy to egg (see table 2).

Our study suggests that the positive allergic reaction to vaccine must be related in large measure, if not entirely, to the presence of egg white protein in the vaccine, for never was a positive reaction to the vaccine obtained in the absence of a positive reaction to egg white.

From a review of the literature there is little doubt that immediate, profound and even fatal reactions may ensue from the first injection of vaccine in a person exquisitely sensitive to egg white. In such cases our observations show that an intradermal inoculation of 0.02 cc. of the vaccine used as a preliminary test may induce a systemic allergic response. This is exemplified by case 2 (L. D.). It is imperative when a person reacts to the preliminary intradermal test in this manner that further administration of vaccine be withheld. Such instances are rare, however.

In case 9 (P. L.), although a large local, without a systemic, reaction resulted from administration of the test dose (0.02 cc.), when a larger dose (0.5 cc.) was administered subcutaneously one-half hour later, a profound generalized allergic reaction occurred. A large local positive intradermal reaction is evidence, therefore, for the need of exercising caution in the prophylactic administration of the vaccine. Further attempts to gather additional data on this point were not made because of the danger inherent in such a procedure.

When a local reaction is moderate in size, Plotz[18] has shown that the subsequent administration of three weekly inoculations of 1 cc. each of typhus vaccine can be tolerated without systemic reactions. This observation is fortified by cases 6 (B. H.) and 11 (B. W.) in our series; ten years previously these patients were decidedly sensitive to egg white, while at present only a moderate local reaction was obtained, indicating a waning sensitivity. It is reasonable to assume that this type of patient can tolerate a full prophylactic dose of vaccine.

Although related egg proteins apparently play a negligible role in this type of vaccine hypersensitivity, in all instances in which great sensitivity to egg white was evident, related sensitivity to egg protein was also present. This did not hold with equal regularity in instances in which there was residual or moderate sensitivity to egg, in most of which related sensitivity to egg protein was absent.

Of the 11 patients sensitive to egg white and vaccine, only 5 (cases 2, 5, 8, 9 and 10) could be regarded as sensitive enough to make circumspection and caution necessary in the use of the vaccine. Therefore, even though 11 of 108 patients (10.2 per cent) were sensitive to the vaccine, it appears that only 5 (4.6 per cent) were sensitive enough to warrant caution in administering the vaccine. Given an allergic group of children, one might therefore expect about 5 per cent to be sensitive enough to egg white to be decidedly sensitive to the vaccine. If the incidence of allergy in the general population is 10 per cent, then the serious egg allergenicity in the general population would be 5 per cent of 10 per cent (0.5 per cent or 1 in every 200 persons). If sensitivity to egg is more prevalent among children, as are all food sensitivities, then the figure of 0.5 per cent in the general population can be further reduced. This is in accord with the point of view of Plotz.

In order to safeguard these seriously sensitive persons, 1 or fewer in every 200 who are to receive vaccine, it is not alone sufficient to obtain a history of allergy to egg, for often this is vague, but a test dose of vaccine should be given before each and every prophylactic injection and perhaps also a test should be made with egg white. If both or either is strongly positive, the patient is seriously sensitive, and vaccine should be withheld. If a systemic reaction results from the test dose, vaccine should be withheld unconditionally. If only a moderate local reaction ensues, the vaccine can be given in three to six divided doses, spaced at one, two or three day intervals, with the concomitant administration of epinephrine (3 minims [0.18 cc.] of a 1:1000 dilution). These phases will be the subject of further investigation.

The 39 patients who gave only suggestive reactions to the vaccines also gave suggestive reactions to one or more of the egg proteins. These children for the most part were from 8 to 13 years of age and in all probability had a moderate or mild sensitivity, which at present is not of clinical significance. In a number of instances, some of these suggestive reactors were shown to be sensitive to the solution of formaldehyde and not to egg.

Lt. Col. Johnson F. Hammond, M. C.,[24] has stated: "Several severe reactions have been reported to the Surgeon General's office. The number of reactions known to have occurred is negligible in comparison with the number of doses of egg vaccine administered, now in the millions. Nevertheless, medical officers should be alert to the possibility of egg sensitivity in persons given typhus vaccine, yellow fever vaccine, or other prophylactic biologicals derived from eggs. If individuals suspected of being egg sensitive are given skin tests to confirm the diagnosis, egg vaccine material should be diluted 1000 fold and intradermal skin tests done by the injection of as small an amount as possible. If this test is negative, it may be repeated with a 1 : 100 dilution and should this be negative, with a 1 : 10 dilution. Undiluted vaccine may produce nonspecific irritative skin reactions. Desensitization is not recommended."

Several of the authors reviewed herein have expressed the opinion that the incidence of sensitivity in the army experience is smaller than it would be in civilian practice, particularly among children. It was with this in mind that the present study was undertaken in this highly potential group.

We believe that a history of allergy per se is not of any significance whatsoever, for allergic persons without specific sensitivity to egg proteins are not more likely to have a reaction from vaccine than is a nonallergic person. We are further of the opinion that a history of sensitivity to egg is of questionable value since in case 9 the patient who was highly sensitive to egg white, had a constitutional reaction to the injection of vaccine. When first studied by us for his allergy two years previously, the disclosure of sensitivity to egg was a complete surprise to his parents.

We agree with Colonel Hammond that all precautions should be taken before each and every administration of vaccine. From our experience we should like to offer certain suggestions and draw the following conclusions:

CONCLUSIONS

1. In a group comprising 108 highly allergic children who were studied completely for their allergy, 10.2 per cent were sensitive to eggwhite protein. However, only 4.6 per cent were sensitive enough to be regarded potential hazards for influenza vaccine administration.

2. Untested patients have been known to have a profound or fatal anaphylaxis from a first or subsequent prophylactic injection of influenza vaccine.

3. All persons should be tested intradermally with undiluted vaccine, using 0.02 cc. before administering each and every prophylactic dose.

4. If the test dose is negative or suggestive, the vaccine can be given with impunity.

5. If a moderate local reaction ensues, the vaccine can be administered with the added precaution of using 2 or 3 minims (0.12 to 0.18 cc.) of epinephrine simultaneously.

6. If a large local reaction is obtained, the vaccine can be given with the added precautions of using epinephrine just prior to the administration and giving the vaccine in divided doses at one, two or three day intervals. The vaccine can also be tried intradermally in several repeated doses of one-tenth the required amount. If this proves immunologically adequate, it may be the method of choice.[25]

7. If a test dose induces a systemic reaction, the vaccine should be withheld unconditionally.

8. Attempts should be made to rid the vaccine of as much egg protein as is possible in its manufacture.

9. A history of sensitivity to egg is not as reliable a criterion as an intradermal test with the vaccine.

10. Egg protein skin tests are necessary only for academic or research purposes, for it is proved by other observations, as well as by our own, that allergic vaccine reactions of any consequence are due entirely to the egg protein content of the vaccine.

11. Use of a virus or rickettsial vaccine for prophylaxis need not be feared if the single admonition is observed of preceding each and every prophylactic injection with an intradermal test dose of vaccine. This simple measure eliminates practically all hazard from the vaccine's use in the persons, approximately 0.5 per cent of the general population, who are hypersensitive to egg.

12. Use of vaccines is not dangerous to 99.5 per cent of the general population, which includes all the allergic persons who are sensitive to proteins other than egg and about 50 per cent of the persons moderately sensitive to egg. With further purification of the vaccine, even this small hazard can be further reduced.

13. The virus and rickettsial vaccines should be used with increased frequency in the civilian population, but the simple precautions herein outlined should be meticulously observed, to eliminate most, if not all, risk to the egg-sensitive person.

50 East Seventy-Eighth Street.

Prognosis in Coronary Disease.—Coronary disease persisted more than twenty years in 11 of my patients, more than thirty years in 2 of them. The record duration was fifty-two years in a lady who had her first attack of angina at the age of 30; she was leading a busy life at the age of 80, though still liable to angina whenever she walked. She died suddenly at the age of 82. It has long been known that quite extensive coronary disease is compatible with an active life and need not necessarily be associated with angina. In fact this used to be put forward as an argument against the view that angina is due to coronary ischemia. Coronary occlusion often antedates angina. It did so in 225 (22.5 per cent) of my cases. Yet before coronary occlusion can occur there must almost always be coronary disease. Moreover, a remarkably complete functional recovery is possible after a coronary occlusion. One of my patients played vigorous games after a coronary occlusion at the age of 39. He had a second attack at the age of 48 and, against advice, was playing tennis regularly two years later without any angina. Now at the age of 58 he is at work, plays golf and mows his lawn without cardiac symptoms. It is common for coronary disease to be entirely latent till sudden death takes place. Professor Hume of Newcastle tells me that since 1911 he has performed or attended postmortem examinations on 160 miners who had died suddenly and unexpectedly in the pit or in close proximity to it. The cause of death in each instance was coronary atheroma, and most of the men had been working regularly, without complaint, up to the moment of their fatal collapse. Only 40 had premonitory symptoms—Cassidy, Sir Maurice: Coronary Disease, *Lancet*, Oct. 26, 1946.

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[24] Hammond, J. F., cited by Roth.[18]

[25] Ratner, B.: Allergy, Anaphylaxis and Immunotherapy, Baltimore, Williams & Wilkins Company, [illegible]

FOLIC ACID IN THE REHABILITATION OF PERSONS WITH SPRUE

GUILLERMO GARCIA LOPEZ, M.D.
Havana, Cuba
TOM D. SPIES, M.D.
Birmingham, Ala.
JOSE ARISTIDES MENENDEZ, M.D.
and
RUBEN LOPEZ TOCA, M.D.
Havana, Cuba

The observations of Spies and associates from studies made in the Calixto Garcia Hospital, Havana, Cuba, and carried out under the auspices of the University of Cincinnati, the University of Havana and the Institute of Nutrition of Cuba have made it abundantly clear that persons with sprue in relapse are profoundly benefited by the administration of synthetic folic acid. The acute manifestations of the disease subsided rapidly as the blood began its regeneration, and the alimentary tract tended to regain its normal function.[1] Although these cooperative studies are still in progress, we already have seen persons with sprue rehabilitated by means of folic acid therapy. The present report is confined to this aspect of our studies in 18 cases of sprue. The acute manifestations and the early response to folic acid in 9 of these cases have been reported.[1a] The present report includes and extends our observations in those 9 cases and includes 9 additional cases.

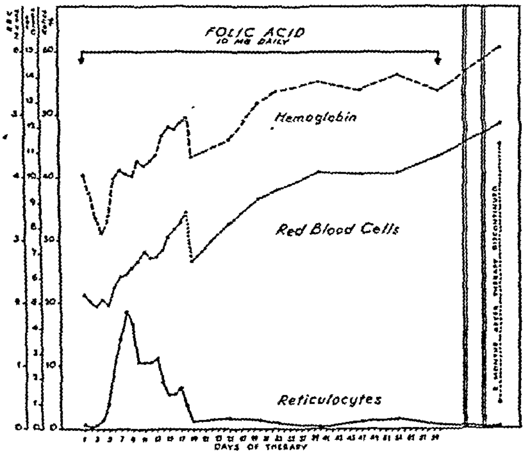

Fig. 1 (case 6).—Effect of folic acid on macrocytic anemia of sprue.

Eighteen patients were selected for study using the following criteria: 1. The patient must have macrocytic anemia. 2. The bone marrow must show the typical erythroblastic arrest seen in pernicious anemia. 3. The erythrocyte counts must be below 2.5 million. 4. The patient must be untreated, or he must not have been treated recently enough to interfere with our evaluation of the effect of folic acid. 5. He must have persistently low reticulocyte counts during the period of observation. 6. He must have glossitis and diarrhea characterized by fatty stools.

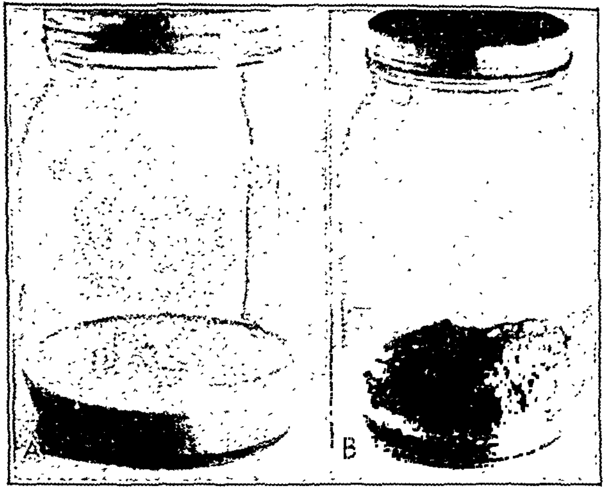

Fig. 2 (case 6).—*A*, liquid character of the stools on the day of admission to the hospital; *B*, stool seventy-two hours after the initiation of folic acid therapy.

Each patient selected was admitted to the hospital for preliminary examination, base line determinations and treatment in which the following plan of study was observed: From the time the patients were admitted their diets were rigidly controlled. Meat, meat products, fish and poultry were excluded, and only 1 quart of milk and 1 egg were allowed daily. All other foods were allowed to the extent desired. In each case a detailed medical and dietary history was obtained and a careful physical examination made. Daily hematologic examinations included white and erythrocyte

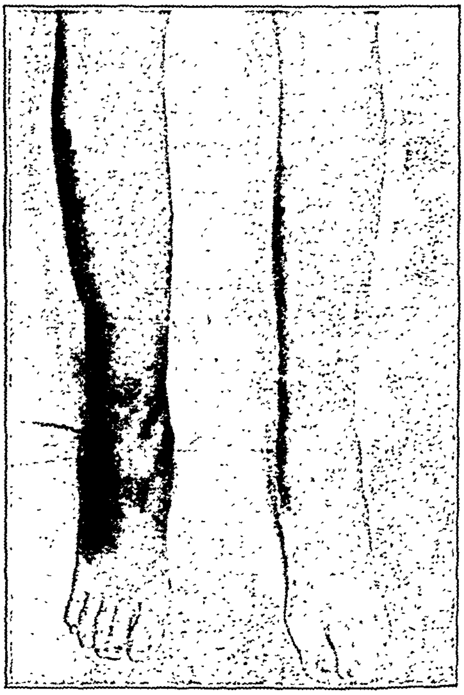

Fig. 3 (case 6).—Bilateral edema; note area of pitting on the right ankle following pressure with thumb.

The folic acid was supplied by Lederle Laboratories, Inc.

The expenses of this study were borne by grants from the Lederle Laboratories, Inc., and the Edward Mason Williams Fund and the Martha Leland Sherwin Fund.

University of Cincinnati Studies in Nutrition at the Calixto Garcia Hospital, Havana, Cuba, in cooperation with the Institute of Nutrition of Cuba and the University of Havana.

In the medical care of the patients included in this study we were assisted by many physicians who voluntarily aided us throughout the course of the study. In the special nursing and dietary care of the patients we were assisted by Miss Mariana de la Fuente, Miss Maria del Carmen Gonzalez, Miss Flora Villate, Miss Angela Pedraza, Miss Maria de las Angeles Perez, Miss Eva Averoff, Mrs. Eleanor Bennett and Miss Monette Springer, nurses, and by Mrs. Myrtle Neblett and Miss Jean Grant, nutritionists. The hematologic examinations were made by Mrs. Mary B. Koch, Miss Virginia Minnich and Miss Georgia Gwinner.

[1] (*a*) Spies, T. D.; Milanes, F.; Menendez, A., and Minnich, V.: Observations on the Treatment of Tropical Sprue with Folic Acid, J. Lab. & Clin. Med. **30:** 1056, 1945. (*b*) Spies, T. D.: Effect of Folic Acid on Persons with Macrocytic Anemia in Relapse, J. A. M. A. **130:** 474 (Feb. 23) 1946.

blood cell counts, hemoglobin determinations and reticulocyte counts. (Certified Trenner pipets were used for both the white and erythrocyte blood cell counts.) The hemoglobin content of the blood was determined in grams by means of a Leitz colorimeter, and the reticulocytes were counted in wet preparations by the use of a modified brilliant cresyl blue solution of Dameshek. From time to time cell volumes were determined on oxalated venous blood by means of Wintrobe hematocrit tubes. In each case bone marrow was obtained prior to treatment by sternal aspiration. Differential counts were made on preparations stained with both supravital and Wright-Giemsa stains. Gastric contents were collected before and after injections of histamine. Twenty-four hour stool specimens were collected daily in a single large glass graduated container. The stools were examined every day for appearance and volume. Each patient was questioned every morning concerning the number of bowel movements. Examination of the feces included tests for acidity, fatty acid determinations by the method of Labbe and Larue, bacteriologic examinations and examinations for parasites. Serum protein determinations were made in each case. In most cases blood calcium, phosphorus, potassium, amylase and lipase determinations were made.

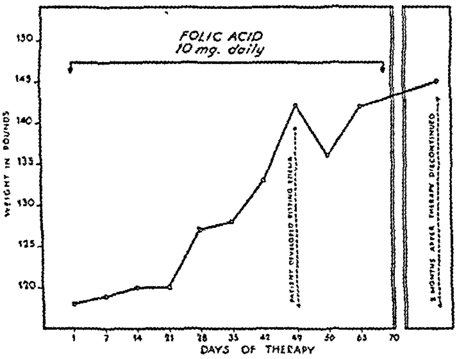

Fig. 4 (case 6).—Gain in weight by patient with sprue.

After base line determinations were obtained, folic acid was administered orally in water suspension between meals. It was prepared by mixing it to a smooth paste with 4 or 5 drops of cold water and then adding 20 cc. of cold water while the mixture was being stirred constantly. After the patient drank this material, a small amount of water was used to rinse the glass thoroughly, and he drank this also to insure his getting as much of the folic acid as possible. During the latter part of the study folic acid became available in tablets, and it was administered in this form. In the first cases studied (cases 1, 2, 5, 7, 8, 9 and 11) when we knew little about dosage, 100 mg. was administered twice daily. Subsequently, the dosage in these cases was reduced to 100 mg. daily and then to 25 mg. daily. From cases studied later (cases 3, 4, 6, 10, 12, 13, 14, 15, 16, 17 and 18) we learned that 5 to 10 mg. daily is just about as effective as the larger doses.

Dietary histories revealed that in every instance the dietary had not been completely adequate even prior to the onset of illness. The foods conspicuously lacking or eaten in insufficient amounts were meat, fish, poultry, eggs and milk. In all cases cereal foods, root vegetables and dried beans had been the foods used most commonly and *in the most liberal amounts. Following the onset* of illness, loss of appetite and soreness of the tongue had so interfered with the intake of food that in each case the diet of the patient was grossly deficient in all nutrients.

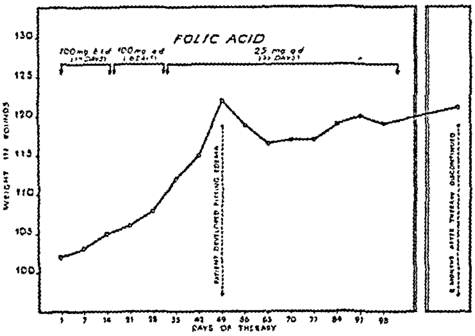

Fig. 5 (case 8).—Gain in weight by patient with sprue.

The major clinical symptoms on admission are shown in table 1.

The hematologic observations before and after therapy are shown in table 2. Many of the laboratory studies are still in progress. A complete report of determinations on bone marrows and stools subsequent to folic acid therapy will be published later. Suffice it to say at this time that both the bone marrow and stool determinations tend to revert to normal.

The typical clinical and hematologic response to therapy and the complete rehabilitation following therapy are illustrated in the following cases:

REPORT OF CASES

CASE 6.—*History.*—A. M., a white man aged 37, was admitted to the General Calixto Garcia Hospital on Nov. 30, 1945, with a history of loss of appetite, diarrhea, weakness, dizziness and soreness of the mouth and tongue of one year's duration. The family history and past history were noncontributory.

Until one year prior to his admission he had worked strenuously as a wood-cutter. He had a good appetite and ate large amounts of rice, dried beans and root vegetables. He disliked fruit and fresh vegetables and never ate them, and he seldom ate eggs or meat or drank milk. One year prior to his admission he began having severe diarrhea, which persisted for two weeks. During this time he had anorexia, weakness and loss of weight and was unable to work. His physician prescribed emetine, and the diarrhea disappeared. Although there was little improvement in his appetite or strength following the cessation of the diarrhea, he returned to work and continued to work for four months, at the end of which time he again

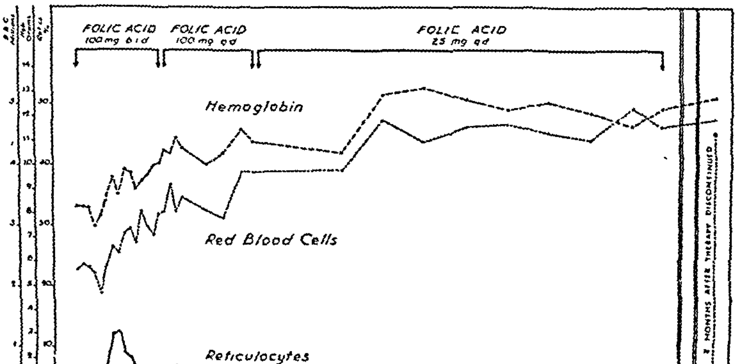

Fig. 6 (case 8).—The effect of folic acid on macrocytic anemia with sprue.

began having diarrhea. This time emetine failed to give relief. He had from four to six voluminous, foul-smelling, liquid or semisolid, yellow foamy stools a day which were accompanied by a sensation of flatulence and severe burning of the rectum. Since he did not desire food and thought that it aggravated his diarrhea, he restricted his diet to rice, bread and coffee. A few days after the diarrhea began he observed that his tongue was red and sore. A few weeks later he began having pain and paresthesias in the lower extremities. He grew progressively weaker, and for two weeks prior to his admission he had been unable to work. During the year he was ill he lost 32 pounds (14.5 Kg.) in weight.

Physical Examination.—Physical examination showed a well developed, undernourished, pale, weak, listless man who appeared extremely depressed. The skin was pale and generally dry and pigmented over the anterior surface of both legs. The tongue was slick except for many hyperemic papillae along the edges. The peripheral reflexes of the legs were uniformly diminished. The remainder of the physical and neurologic examinations revealed essentially normal conditions.

Laboratory Data.—Blood: Examination of the blood revealed the following: red blood cells, 2.13 million; hemoglobin, 10.1 Gm. (66 per cent) per hundred cubic centimeters; white blood cells, 5,200, and reticulocytes, 0.8 per cent. The mean corpuscular volume was 131 cubic microns, the mean corpuscular hemoglobin was 47 micromicrograms and the mean corpuscular hemoglobin concentration was 36 per cent.

Differential Bone Marrow Counts: In the bone marrow the percentage of cells was as follows: metamyelocytes, 17.0; myelocytes C, 13.5; myelocytes B, 1.5; band neutrocytes, 5.0; segmented neutrocytes, 30.0; basophils, none; eosinophils, 6.0; megakaryocytes and plasma cells, none; lymphocytes, 23.5; clasmatocytes, 3.5, and reticulum cells, none, for a total of 100 per cent. The number of megaloblasts was 3; early erythroblasts, 17; late erythroblasts, 35, and normoblasts, 79.

Gastric Analysis: A fasting specimen of the stomach contents gave a determination of 40 degrees free hydrochloric acid and 50 degrees total acidity. The reading thirty minutes after histamine stimulation was 95 degrees free hydrochloric acid and 100 degrees total acidity.

Serum Protein: The determination of serum proteins was: total, 5 Gm.; albumin, 2.2 Gm.; and globulin, 2.4 Gm., per hundred cubic centimeters. The serum cholesterol reached a total of 203 mg. and the serum cholesterol ester, 128 mg., per hundred cubic centimeters. Other determinations were: calcium, 12.0 mg.; phosphorus, 3.5 mg., and potassium, 10.0 mg., per hundred cubic centimeters. The serum amylase level was 110 units, the serum lipase, 0.3 (cc. of twentieth-normal sodium hydroxide per hundred cubic centimeters).

Stool Examination: Stool examination showed Trichuris trichiura, Necator americanus and Giardia intestinalis. Pathogenic bacteria were not obtained on culture.

Proctoscopic Examination: Proctoscopic examination showed normal mucosa without ulceration.

TABLE 1.—*Major Clinical*

Case	Patient	Age	Sex	Duration of Present Illness	Loss of Appetite	Weight Loss Lb.	Weight Loss Kg.	Weakness	Dizziness	Headache	Sore Tongue	Glossitis	Nausea	Vomiting	Burning of Stomach	Epigastric Distress	Flatulence
1	C. G.	29	♀	10 mos.	Yes	25	11.3	Extreme	Yes	Frequent	Severe	Severe	Occasional	No	Severe	Severe	Yes
2	M. S.	46	♀	1 yr.	Yes	47	21.3	Extreme	Yes	Occasional	Severe	Severe	Frequent	Frequent	Severe	Severe	Yes
3	C. B.	47	♀	6 mos.	Yes	15	6.8	Extreme	Yes	Occasional	Severe	Severe	Occasional	Occasional	Severe	Moderate	Yes
4	J. C.	63	♂	8 mos.	Yes	18	8.2	Moderate	Yes	No	Moderate	Moderate	No	No	Moderate	Moderate	Yes
5	G. A.	62	♂	1 yr.	Yes	30	13.6	Extreme	Yes	Frequent	Severe	Severe	No	No	Severe	Severe	Yes
6	A. M.	37	♂	1 yr.	Yes	32	14.5	Extreme	Yes	No	Severe	Severe	Occasional	Occasional	Severe	Severe	Yes
7	A. F.	75	♂	6 mos.	Yes	58	26.3	Extreme	No	No	Severe	Severe	Occasional	Occasional	Moderate	Moderate	Moderate
8	P. E.	63	♂	5 yrs.	Yes	20	9.1	Extreme	Yes	Frequent	Severe	Severe	No	No	Severe	Severe	Severe
9	J. G.	40	♂	5 yrs.	Yes	27	12.2	Extreme	Yes	Almost constant	Severe	Severe	No	No	Severe	Severe	Moderate
10	D. L.	67	♀	1 yr.	Yes	30	13.6	Extreme	No	Frequent	Severe	Severe	No	No	Severe	Severe	Moderate
11	F. G.	33	♀	2 yrs.	Yes	16	7.3	Extreme	Yes	Frequent	Severe	Severe	No	No	Moderate	Moderate	Moderate
12	R. C.	43	♂	5 yrs.	Yes	25	11.3	Moderate	Yes	Occasional	Moderate	Moderate	No	No	Moderate	Moderate	Moderate
13	I. D.	64	♂	7 yrs.	Yes	17	7.7	Extreme	Yes	No	Moderate	Mild	No	No	No	Occasional	Yes
14	C. C.	44	♂	1 mo.	Yes	20	9.1	Extreme	Yes	Seldom	Severe	Severe	No	No	Moderate	Moderate	Severe
15	F. S.	75	♂	5 yrs.	Yes	40	18.1	Extreme	Yes	Occasional	Occasional	Moderate	No	No	No	At times moderate	Moderate
16	E. E.	75	♂	5 yrs.	Yes	36	16.3	Extreme	Yes	Severe	Severe	Yes	No	No	No	Moderate	Severe
17	F. P.	66	♂	?	Yes	34	15.4	Extreme	Yes	No	Severe	Severe	No	No	At times severe	At times severe	Severe
18	E. V.	23	♂	9 mos.	Yes	32	14.5	Extreme	Yes	No	Severe	Yes	Occasional	Occasional	Severe	Severe	Severe

Progress.—On admission to the hospital the patient was given the diet previously described. After the base line studies were completed, he was given 10 mg. of folic acid a day by mouth. On the fifth day of therapy the reticulocytes rose to 4.0 per cent and reached a peak of 18.8 per cent on the eighth day. By the fourteenth day the red blood cells had increased to 2.84 million and the hemoglobin to 11.7 Gm. (76 per cent). At the time the patient was discharged, sixty-six days after folic acid therapy was initiated, the red blood cell count was 4.36 million, the hemoglobin 13.5 Gm. (88 per cent) and the reticulocytes 0.8 per cent. See figure 1 which shows the hemopoietic response.

The clinical improvement paralleled the hemopoietic response. Three days after therapy was initiated the patient stated that he felt stronger and said that he was hungry. He took all the food he was offered and asked for additional servings, whereas prior to treatment he usually refused everything on his tray except soup and coffee. Two days later he volunteered the information that his mouth and tongue no longer burned. A striking decrease in the diarrhea likewise occurred on the third day of therapy. That day he had only two stools which were soft, rather liquid, normal in color and not foamy (fig. 2).

Rectal burning ceased, as did the sensation of flatulence. Between the forty-second and forty-ninth days of treatment pitting edema of the ankles appeared (see fig 3) then subsided the following week. This clinical and hematologic improvement occurred despite the fact that he was not given antiparasitic therapy; examination of his stools subsequent to the administration of folic acid showed the presence of all the parasites found prior to treatment. By the time he was discharged on the sixty sixth day of therapy he had gained 27 pounds (12 Kg) (see fig 4). The day after he was discharged he returned to work as a wood cutter. Two months later he returned for follow up studies. At this time he was in excellent health. He was eating regularly the recommended diet which included liberal amounts of meat, eggs and milk. Bowel movements were occurring only once a day and were normal in volume, consistency and color. Although he had worked strenuously six days a week he had gained 3 pounds (1.4 Kg). Examination of the blood showed red blood cells, 4.87 million, hemoglobin 15.2 Gm (99 per cent), and reticulocytes, 0.4 per cent.

Symptoms on Admission

No of Stools in 24 Hrs	Bulky Stools	Consistency of Stools	Foamy Stools	Color of Stools	Blood in Stools	Mucus in Stools	Bowel Movement Accompanied with Colic	Rectal Burning on Defecation	Time of Severity of Diarrhea	Diarrhea Aggravated by Food	Pain in Extremities	Paresthesias	Pitting Edema
10 12	Yes	Watery	Yes	Yellow	No	No	Yes	No	After meals	Yes	Yes	Yes	Yes
10 or more	Yes	Semiliquid	Yes	Yellow	No	No	Occasional	No	After meals	Yes	Yes	Yes	Yes
14 18	Yes	Semiliquid	Yes	Yellow	No	Occasional	Yes	Yes	After meals	Yes	No	Yes	Yes
3 4	Yes	Semiliquid	Yes	Light	No	No	Yes	No	After meals	Yes	No	Yes	No
15 16	Yes	Watery	Yes	Yellow	No	Occasional	Yes	No	All hours no particular time	No	No	Yes	Yes
4 6	Yes	Watery	Yes	Yellow	No	No	Yes	Yes	Evening	No	Yes	Yes	Yes
7 8	Yes	Watery	Yes	Yellow	No	No	No	No	During night	No	Yes	No	Yes
20 50	Yes	Watery	Yes	Greenish yellow	No	No	Severe	No	All hours no particular time	No	Yes	Yes	No
5 6	Yes	Watery	Yes	Greenish yellow	No	Yes	Severe	Yes	Morning	Yes	Yes	Yes	Yes
2 3	Moderately	Watery	Yes	Yellow	No	Occasional	Occasionally moderate	Yes	After meals	Yes	Yes	Yes	Yes
3 4	Yes	Watery	Yes	Yellow	No	No	Rarely	No	During night	No	Yes	Yes	Yes
[illegible]	Moderately	Watery	Yes	Light brown	Yes	Yes	Occasional	No	Morning	Yes	No	Occasional	No
15 20	Yes	Watery	Yes	Whitish yellow	No	No	Yes	No	Morning	Yes	Yes	Yes	Yes
7 8	Yes	Watery	Yes	Yellow	No	No	Yes	Yes	No particular time	No	Yes	Occasional	Yes
4 5	Yes	Mushy	Occasional	Light brown or yellow	No	Occasional	Yes	No	After lunch	Yes	Yes	Severe	Yes
6 8	Yes	Watery	Yes	Light	Yes	No	Yes	Yes	No particular time	No	Yes	Yes	No
10 14	Yes	Semiliquid	Yes	Yellow	No	No	Yes	Yes	During night	No	Yes	No	Yes
6 8	Yes	Liquid	Yes	Yellow	No	No	Yes	Yes	Evening	Yes	Yes	No	No

Case 8.—*History.*—P. E., a white man aged 63, was admitted to the General Calixto Garcia Hospital on Nov. 19, 1945 with a history of diarrhea, loss of appetite, weakness and burning of the mouth and tongue of five years duration. The family history and past history were noncontributory.

For a number of years his diet had consisted chiefly of potatoes, root vegetables, corn in various forms and from three to four eggs daily. He rarely drank milk and seldom ate beef and pork because he thought they caused gastric distress. Other than occasional gastric distress following the ingestion of beef and pork his health had been perfect until five years before admission to the hospital when he noticed a burning sensation of the mouth and tongue. Soon after this he began to have severe diarrhea. Sometimes he had thirty bowel movements a day which were usually preceded by severe colic. The stools were yellow in color and foamy. He consulted a physician who prescribed liver extract, which he took intermittently for three years, during which time he remained well. One and one-half years after he discontinued taking liver extract he again began to have diarrhea, and all the symptoms he had during his first illness reappeared. He lost his appetite, began having paresthesias of the legs, dizziness and tinnitus, and he became progressively weaker. After losing 20 pounds (9 Kg) he reported to his physician, who sent him to us.

Physical Examination.—Physical examination showed a well developed, pale, emaciated man who lay quietly in bed without apparent desire to move. The tongue was slick and shiny and was intensely red along the tip and edges. The remainder of the physical and neurologic examination revealed essentially normal conditions.

Laboratory Data.—Blood: Examination of the blood revealed red blood cells, 2.28 million, hemoglobin, 8.3 Gm (54 per cent), white blood cells, 7,900, and reticulocytes, 1.1 per cent. The mean corpuscular volume was 119 cubic microns, the mean corpuscular hemoglobin was 42 micromicrograms and the mean corpuscular hemoglobin concentration was 32 per cent.

Differential Bone Marrow Counts: In the bone marrow the percentage of cells was as follows: metamyelocytes, 17, myelocytes C, 17, myelocytes B, 3, band neutrocytes, 17, segmented neutrocytes, 26, basophils, none, eosinophils, 3, megakaryocytes, 1, plasma cells, 2, lymphocytes, 13, clasmatocytes, 1, and reticulum cells, none, for a total of 100 per cent. The number of megaloblasts was 4, early erythroblasts, 15, late erythroblasts, 12, and normoblasts, 44.

Gastric Analysis: A fasting specimen of the stomach contents gave a determination of 15 degrees free hydrochloric acid and 20 degrees total acidity. The reading thirty minutes after histamine stimulation was 65 degrees free hydrochloric acid and 75 degrees total acidity.

Serum Protein: The determination of serum proteins was: total 5.4 Gm, albumin, 3.6 Gm and globulin, 1.8 Gm, per hundred cubic centimeters. The serum cholesterol reached a total of 225 mg and the serum cholesterol ester, 180 mg, per hundred cubic centimeters. Other determinations were calcium, 10.8 mg.; phosphorus, 5.0 mg., and potassium, 13.4 mg., per hundred cubic centimeters. The serum amylase level was 98 units, the serum lipase, 1.3 (cc. of twentieth-normal sodium hydroxide per hundred cubic centimeters).

Stool Analyses: Examination of the stool disclosed that the p_H was 4.5 and the fatty acid, 12.3 cc. of tenth-normal sodium hydroxide (per 100 Gm. of moist feces). Stool examination did not show pathogens or parasites. Specific pathogenic bacteria were not obtained on culture.

Protoscopic Examination: The mucosa was edematous, congested, hypertrophic, slick and of a type compatible with a diagnosis of nutritional deficiency.

Progress.—On admission to the hospital the patient was given the diet previously described. After the completion of base line studies he was given 100 mg. of folic acid twice a day by mouth. On the sixteenth day, the dosage of folic acid was reduced to 100 mg. a day and on the thirty-first day to 25 mg. a day. (This was one of the first cases studied. We have since learned that 10 mg. a day would have produced the same response.) On the fifth day of therapy the reticulocytes began to rise and reached a peak of 12.5 per cent on the eighth day. By the fourteenth day the red blood cells had increased to 2.85 million and the hemoglobin to 10.0 Gm. (65 per cent), a net increase in red blood cells of 0.57 million and in hemoglobin of 1.7 Gm. Thirty days after the initiation of therapy the bone marrow was normoblastic. When the patient was discharged after one hundred and two days on folic acid therapy, examination of the blood showed red blood cells, 4.54 million; hemoglobin, 12.6 Gm. (82 per cent), and reticulocytes, 1.0 per cent. (See figure 6, which shows the hemopoietic response.)

Subjective improvement began on the third day of treatment when the patient volunteered the information that his appetite, strength and vigor had improved. By the sixth day the soreness of his tongue had disappeared, and the redness had begun to fade. By the twentieth day it was normal in appearance, and after forty-three days on therapy the papillae had completely regenerated. During the preliminary period of study he had been having from six to eight foul-smelling, yellow, frothy stools a day with a total volume of from 1,000 to 1,500 cc. They became normal in color, odor and volume, although they were

edema of the ankles, which occurred on the forty-ninth day of treatment and gradually subsided within two weeks, the clinical and hematologic improvement was uninterrupted. When he was discharged after one hundred and two days of therapy he had gained 17 pounds (7.7 Kg.) in weight (fig. 5). He returned to work in a copper mine the day after he was discharged from the hospital. When he returned for follow-up studies two months later, examination of the blood showed red blood cells, 4.80 million; hemoglobin, 12.8 Gm. (83 per cent), and reticulocytes, 0.6 per cent. Bowel movements were occurring only once a day and were normal in color, volume, odor and consistency. He had eaten regularly of the prescribed diet, which included liberal amounts of meat, eggs and milk. Despite having done heavy work in a copper mine eight and one-half hours a day for six days a week from the time he was discharged, he had gained 3 pounds (1.4 Kg.) and had remained asymptomatic.

Table 2.—*Antianemic Effect of Folic Acid in Sprue*

		Red Blood Cells, Millions			Hemoglobin, Gm.			Reticulocytes, %			Folic Acid Therapy		
											Daily Dosage		Total Days of Administration
Case	Name	Initial	14th Day	Final Day	Initial	14th Day	Final Day	1st Day of Rise	Day of Peak	% at Peak	Mg.	Days	
1	C G	1.47	2.55	3.80	6.8	8.6	11.5	4	6	22.7	200 100 25	21 16 50	87
2	M S	1.99	2.60	3.98	7.2	10.0	12.8	3	6	19.5	200 100 25	15 16 121	152
3	G B	1.53	2.40	4.19	7.1	10.7	11.5	5	8	22.6	10	129	129
4	J C	1.57	2.03	4.60	7.0	7.4	[illegible]	5	8	27.2	10	63	63
5	G A	1.28	2.49	4.41	5.9	8.1	14.4	4	6	31.8	200 100 25	15 16 105	136
6	A M	2.13	2.84	4.36	10.1	11.7	13.5	5	8	18.8	10	66	66
7	A F	2.16	2.66	4.33	9.5	9.7	13.2	5	7	17.2	200 100 25	24 16 102	142
8	P F	2.28	2.85	4.54	8.3	10.0	12.6	6	8	12.5	200 100 25	15 16 51	82
9	J S	1.97	3.04	4.84	9.7	10.4	15.0	5	7	17.2	200 100 25	25 16 102	143
10	D I	1.32	2.52	3.34	6.5	8.2	14.8	4	6	14.0	10	55	55
11	I G	1.61	3.48	4.39	[illegible]	10.3	12.9	[illegible]	6	22.9	200 100 25	13 16 51	80
12	R C	2.61	3.63	4.24	11.0	11.9	[illegible]		8	7.4	5	52	52
13	I D	1.95	2.10	4.09	10.2	10.3	12.4	6	12	8.2	10	77	77
14	C C	0.98	2.92	4.62	[illegible]	7.9	[illegible]	3	7	[illegible]	10	77	77
15	J S	1.64	1.74	3.22	5.2	6.1	6.1	5	9	15.7	10	61	61
16	J F	1.25	2.92	3.70	4.6	9.8	11.4	5	9	10.4	10	23	23
17	J P	2.52	2.29	2.29	10.7	10.0	9.6	4	10	6.2	10	22	22
18	F V	2.60	3.47	4.46	11.2	12.0	[illegible]	5	8	[illegible]	10	71	71

COMMENT

Macrocytic anemias occur throughout the world. In the past, many clinicians have considered it essential to divide those cases due to a failure in diet (nutritional macrocytic anemia) from those due to a primary disturbance of the alimentary tract (addisonian pernicious anemia and sprue). Patients with macrocytic anemia with megaloblastic arrest of the bone marrow are studied carefully in our clinic before any attempt at clinical classification is made.[2] Tentatively the diseases of those having achylia after histamine injection are considered as addisonian pernicious anemia. Those having acid steatorrhea are considered as having sprue. The diseases of those having a dietary deficiency without achylia or steatorrhea we call nutritional macrocytic anemia. In an extremely large series of patients one finds persons whose symptoms are difficult to classify in any clearcut clinical syndrome. Indeed, the same patient when seen on different occasions may suggest different syndromes. It is generally considered that there is little essential difference between tropical sprue and nontropical sprue, or celiac disease, and our observations in the United States and in Cuba lend support to this contention. Moore, Bierbaum, Welch and Wright[3] have reported a case of nontropical sprue which responded to folic acid therapy, and Darby, Jones and Johnson[4] reported 3 cases of nontropical sprue which responded similarly.

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[2] Moore, C. V.; Vilter, R.; Minnich, V., and Spies, T. D.: Nutritional Macrocytic Anemia in Patients with Pellagra or Deficiency of the Vitamin B Complex, J. Lab. & Clin. Med. 29: 1226, 1944.

Folic acid may be expected to exert an effect on macrocytic anemia in relapse in persons whose bone marrow shows megaloblastic arrest, irrespective of the presence or absence of steatorrhea, achylia, pellagra and the like. Unpublished observations by one of us (T. D. S.) show that thiamine, nicotinic acid and riboflavin lack therapeutic value in initiating regeneration of the blood in persons with these characteristic anemias and do not supplement folic acid therapy from the standpoint of regeneration of the blood. In patients with any type of macrocytic anemia a deficiency of these vitamins and iron frequently occurs at the same time, and in persons with sprue or nutritional macrocytic anemia there is also a high incidence of infection and parasitic infestations. These complications make research on the macrocytic anemias a difficult and tedious task. Before the introduction of folic acid there was not a known chemical substance that had any profound effect on the ultimate course of the sprue. The problem is now entirely different, and the present paper shows definitely that this substance is of profound importance in the rehabilitation of patients with sprue.

SUMMARY AND CONCLUSION

The present report shows that persons with sprue can be rehabilitated by the judicious use of synthetic folic acid. After the administration of the folic acid there was a prompt regeneration of the blood and a tendency of the alimentary tract to return to normal function. Despite the fact that antiparasitic therapy was not administered, the presence of pathogenic intestinal parasites did not prevent these persons from being profoundly benefited. (We make no claim that the folic acid in any way adversely affected the parasites, and all our examinations indicated that they continued to thrive in the intestinal tracts of our patients.) We do not recommend, in the day to day practice of medicine, that persons with sprue be given a deficient diet such as the one used in this study. In fact, we stress the desirability of prescribing a diet adequate in protein, vitamins and minerals. Of 18 patients rehabilitated, 5 are women who have returned to their full household duties. Nine of the 13 men have returned to work, 9 to their former jobs and 1 to a better job than he had prior to his illness. One of the 4 men (case 9) not working is a cripple who has never been able to work. The other 3, who are 75 years of age (cases 7, 15 and 16), had retired. These 4 patients, however, are able to care for themselves, whereas prior to treatment they had been bedridden and dependent on their families or friends for their personal care. Case 6 is representative of a man who returned to his former job as a wood-cutter. Case 8 is described in detail as an example of a man who returned to industrial work. Examination two months later has revealed that both are in excellent health. Neither one of them has missed a day's work since being discharged from the hospital.

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[3] Moore, C. V., Bierbaum, O. S.; Welch, A. D., and Wright, L. D.: The Activity of Synthetic Lactobacillus Casei Factor ("Folic Acid") as an Antipernicious Anemia Substance: Observations on Four Cases, Two with Addisonian Pernicious Anemia, One with Non Tropical Sprue and One with Pernicious Anemia of Pregnancy, J Lab & Clin Med. **30:** 1056, 1945.

[4] Darby, W. J., Jones, E., and Johnson, H. C.: Effect of Synthetic Lactobacillus Casei Factor in Treatment of Sprue, J. A. M. A. **130:** 780 (March 23) 1946.

PARA-AMINOBENZOIC ACID TREATMENT OF ROCKY MOUNTAIN SPOTTED FEVER

LEWIS B. FLINN, M.D.
JOHN W. HOWARD, M.D.
CHARLES W. TODD, Ph.D.
and
ELVYN G. SCOTT, M.T.
Wilmington, Del.

The use of *p*-aminobenzoic acid (PABA) in the treatment of several of the rickettsial diseases has been reported recently. Following the experimental work of various investigators, Yeomans, Snyder, Murray, Zarafonetis and Ecke[1] gave the clinical results of the effect of *p*-aminobenzoic acid given orally to 20 patients with louse-borne typhus in Egypt. The course of the disease was favorably modified when treatment was begun early. Tierney[2] in an exceedingly well controlled study showed conclusively that the drug is effective therapeutically in tsutsugamushi fever or scrub typhus. He reported the cases of 34 patients with this disease between the ages of 21 and 45, 18 of whom received *p*-aminobenzoic acid. None of the treated patients died, whereas 3 of the 16 untreated succumbed. More convincing was the prompt drop in temperature and the subsidence of symptoms following the administration of *p*-aminobenzoic acid to the patients who recovered. A large dosage of the drug was given, and high levels were obtained in the blood. Minor toxic effects were observed in the patients receiving exceedingly high dosage. The optimum blood level was finally considered to be 30 to 60 mg. per hundred cubic centimeters.

Previously, experimental work by Anigstein and Bader[3] and by Hamilton, Plotz and Smadel[4] indicated that spotted fever rickettsias were even more susceptible to *p*-aminobenzoic acid than the typhus rickettsias. The first report of a case of spotted fever treated with this drug was by Rose, Duane and Fischel.[5] The patient contracted the disease on Long Island, N. Y., and the administration of *p*-aminobenzoic acid apparently exercised a beneficial effect. Maroney, Davis and Scott[6] reported a similar result in the first case of spotted fever so treated in Delaware. We are now reporting additional cases.

PREVIOUS STATUS OF DISEASE IN DELAWARE

In properly evaluating any new mode of therapy in a disease such as Rocky Mountain spotted fever, the preexisting status of the disease in the particular area concerned is most important. Dyer[7] in 1934 estimated

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This study was made through the cooperation of the Delaware, Memorial, St. Francis and Wilmington General Hospitals and through the courtesy of the following physicians in submitting the case records of their patients for analysis. Charles M. Bancroft, Ira Burns, Harry A. Carl, I. Lewis Chipman, G. W. K. Forrest, Walter S. Lumley, John Maroney, Arthur A. Meucher, Edgar R. Miller, E. Hughes Nutter, Edward Parvis, D. Duer Reynolds, Everett Reynolds, John E. Robbins, William Silverman, M. F. Squires Jr., Roger Thomas, J. William Urie and Norwood W. Voss.

[1] Yeomans, A., Snyder, J. C.; Murray, E. S.; Zarafonetis, C. D. J., and Ecke, R. S.: The Therapeutic Effect of Para Aminobenzoic Acid in Louse Borne Typhus Fever, J. A. M. A. **126:** 349-356 (Oct. 7) 1944, correction, ibid **126:** 581 (Oct. 28); 782 (Nov. 18) 1944.

[2] Tierney, N. A.: Para-Aminobenzoic Acid in Tsutsugamushi Disease, J. A. M. A. **131:** 280-285 (May 25) 1946

[3] Anigstein, L., and Bader, M. N.: Para-Aminobenzoic Acid: Its Effectiveness in Spotted Fever in Guinea Pigs, Science **101:** 591-592, 1945.

[4] Hamilton, H. L.; Plotz, H., and Smadel, J. E.: Effect of Para-Aminobenzoic Acid on the Growth of Typhus Rickettsiae in the Yolk Sac of the Infected Chick Embryo, Proc. Soc. Exper. Biol. & Med **58:** 255-262, 1945.

[5] Rose, H. M.; Duane, R. B., and Fischel, E. E.: The Treatment of Spotted Fever with Para Aminobenzoic Acid, J. A. M. A. **129:** 1160-1161 (Dec. 22) 1945.

[6] Maroney, J. W.; Davis, H. C., and Scott, E. G.: Rocky Mountain Spotted Fever: A Case Treated with Para-Aminobenzoic Acid, Delaware State M. J. **18:** 104-106, 1946.

[7] Dyer, R. E.: Rocky Mountain Spotted Fever, Delaware State M. J. **6:** 52-55, 1934.

the mortality of the eastern type of Rocky Mountain spotted fever as 25 per cent; later the same author[8] gave the crude mortality for the disease for the entire country as 18 per cent. The Delaware State Board of Health[9] reports that in the ten year period from 1936 to 1945, inclusive, 50 cases were reported in Delaware. Of those 50 cases, 14 were fatal, a mortality of 28 per cent. A well defined difference in the fatality rate occurred in patients over the age of 40. There were 23 patients over the age of 40, of whom 12 died, a mortality rate of 52 per cent. There were 27 under the age of 40, with 2 deaths, or a mortality rate of about 7 per cent. We have analyzed the records of 31 cases (table 1) of Rocky Mountain spotted fever occurring in the Wilmington, Del., area from 1938 to 1946, inclusive. Twenty-one patients were not treated with *p*-aminobenzoic acid. The fatality rate is similar to that given previously for the entire state (table 2). Of the 21 patients, 5 died, or 24 per cent. There were 6 patients over the age of 40 (group *A*, table 1), of whom 3 died, or 50 per cent. Of the 15 patients under 40 years of age, (group *B* and *C*, table 1), 2 died, or a mortality of 13 per cent. It is evident, therefore, that in this particular area Rocky Mountain spotted fever is of a fairly severe type.

TABLE 1—*Summary of Thirty-One Cases of Rocky Mountain Spotted Fever in Delaware*

	Case	Age	Sex	Year	Day of Disease Admitted to Hospital	Days of Continuous Fever	Rash, Day of Disease	Day of Disease PABA Started	Total PABA Dosage, Gm.	Maximum PABA Blood Level, Mg./100 Cc.	Days of Fever After PABA Started	Proteus OX 19 Changing Titer	Result
Group A Patients over 40 yrs. of age not treated with PABA	1	18	♂	1938		15	3					Negative 1:1,280	Died
	2	51	♀	1941	7	15	4					Negative 1:160	Recovered
	3	60	♂	1941	15	39	13					Negative 1:3,250	Recovered
	4	73	♀	1941	5	24	8					Negative-1:80	Recovered
	5	52	♂	1944	3	10	3					Negative-1:320	Died
	6	65	♂	1946	5	5	4					1:40	Died
Group B Fatal cases, patients under 40 yrs. of age not treated with PABA	7	33	♂	1944	6	12	6					1:80	Died
	8	[illegible]	♂	1945	4	10	3					Negative	Died
Group C 13 patients under 40 yrs. of age recovering without PABA	9	23	♀	1941	13	20	8					Negative 1:160	Recovered
	10	7	♀	1941	6	16	4					Negative-1:400	Recovered
	11	22	♀	1941	10	11	8					Negative 1:320	Recovered
	12	7	♀	1942	6	14	4					Negative, not tested 2d wk.	Recovered
	13	14	♂	1942	5	20	5					Negative 1:320	Recovered
	14	10	♂	1943	6	13	4					Negative-1:160	Recovered
	15	11	♀	1943	8	11	[illegible]					1:320 -1:1,280	Recovered
	16	3	♂	1943	7	29	9					Negative 1:320	Recovered
	17	9	♀	1943	7	17	6					Strongly pos.	Recovered
	18	7	♂	1944	10	23	10					Negative, not tested 2d wk.	Recovered
	19	7	♀	1944	3	17	2					Negative, not tested 2d wk.	Recovered
	20	4	♀	1945	5	13	3					Negative 1:320	Recovered
	21	23	♂	1946	9	19	7					1:160 1:20,000	Recovered
Group D 9 patients under 40 yrs. of age recovering with PABA	22	3	♀	1946	9	15	4	13	60.8	29.0	4	1:40 1:640	Recovered
	23	8	♂	1946	6	10	3	7	50.4	18.5	2	1:20 -1:640	Recovered
	24	11	♀	1946	5	13	3	8	67.0	6.5	3	Negative 1:320	Recovered
	25	11	♀	1946	6	12	4	7	145.0	23.5	5	Negative 1:640	Recovered
	26	22	♀	1946	5	7	3	6	114.0	22.1	1	1:80 -Neg.	Recovered
	27	33	♀	1946	3	8	3	4	162.0	26.0	2	Negative 1:320	Recovered
	28	37	♀	1946	3	7	1	3	270.0	Not done	3	Not tested	Recovered
	29	12	♂	1946	8	14	7	9	162.0	48.0	3	Negative 1:20,480	Recovered
	30	36	♂	1946	6	12	4	6	327.0	39.0	5	1:80 -1:1,600	Recovered
Group E patient over 40 yrs. of age treated with PABA	31	67	♂	1946	8	16	4	8	211.0	80.0	9	1:160 -1:800	Died *

* At autopsy, small granular kidneys indicating severe long standing renal disease were found.

TREATMENT WITH PARA-AMINOBENZOIC ACID

In this series of 10 patients treated with *p*-aminobenzoic acid, 9 under the age of 40 responded dramatically (group *D*, table 1). The records of these patients are very striking when compared to those of 13 patients (group *C*, table 1) under the age of 40 who recovered without receiving *p*-aminobenzoic acid (table 3). The average number of days of fever in the untreated patients was 17.5, as compared to 10.5 for the patients given *p*-aminobenzoic acid. The untreated patients averaged twenty hospital days; those treated, thirteen days. In the treated patients there was a decided clinical improvement twenty-four hours before the temperature started to drop. The temperature of patients given *p*-aminobenzoic acid dropped rapidly to normal within two to four days after treatment was begun, whereas in the untreated patients the temperature gradually came down to normal over a period of about sixteen hospital days. Coincidental with the lowering of the temperature the rash rapidly faded, and the patient made a prompt clinical recovery. The average day of disease on admission to the hospital was 7.2 days for the untreated patients and 5.5 days for those given *p*-aminobenzoic acid. The average day of disease on which therapy was begun was 7.6 days or about the same day of disease as that on which the untreated patients were admitted to the hospital. Composite curves of the maximum average daily temperature (chart 1) in the two groups is especially striking.

CLINICAL EXPERIMENTAL STUDIES WITH PARA-AMINOBENZOIC ACID

Para-aminobenzoic acid is known to be rapidly excreted by the body[10] and consequently the maintenance of a steady effective level in the blood necessitates frequent administration of the drug. In order to select the most favorable mode and schedule of therapy, studies were made of the blood levels and urinary excretion rates following administration of the drug in three different ways: (1) orally in aqueous sodium bicarbonate, (2) as 0.5 Gm. tablets of the sodium salt and (3) intravenously as the sodium salt.[11] The drug concentrations were determined by Bratton and Marshall's[12] sulfonamide procedure as modified by Eckert.[13] Although this method permits differentiation between free and coupled *p*-aminobenzoic acid as far as the amino group is concerned, it does not yield information on the extent of coupling on the carboxyl group to yield such products as *p*-aminohippuric acid, which according to Smith[14] occurs extensively.

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[8] Dyer, R. E.: The Rickettsial Diseases, J. A. M. A. **124**: 1165-1172 (April 22) 1944.

[9] Delaware State Board of Health: Personal communication to the authors.

[10] (*a*) Zehender, F.: Ueber die Acetylierung von primären Aromatischen Aminen in Vivo und in Vitro, Helvet. chim. acta **26**: 1339, 1943. (*b*) Kirch, E. R., and Bergeim, O. J.: Determination of Para Aminobenzoic Acid, J. Biol. Chem. **148**: 445, 1943.

These studies have shown, in agreement with those of Zehender[10a] and Kirch and Bergeim,[10b] that within four hours following the administration of *p*-aminobenzoic acid by any of the three methods already mentioned essentially all of the drug has disappeared from the blood stream. During this time 70 to 80 per cent may be recovered in the urine; about 25 per cent of the material excreted is coupled on the amino group. In chart 2 the average blood levels obtained in two series of eight experiments are plotted as a function of time. One series of patients received 3 Gm. of *p*-aminobenzoic acid in a solution of sodium bicarbonate, the other 3 Gm of the sodium salt of *p*-aminobenzoic acid as six 0.5 Gm. tablets. These results suggest that, due to its slower absorption, more prolonged and steadier levels of the drug in the blood may be obtained with the tablet form and emphasize the importance of administration of the drug at least every two hours and perhaps more frequently if the bicarbonate solution is used. Considerable variations in the maximum blood levels following the oral administration of *p*-aminobenzoic acid, in bicarbonate solution and as the sodium salt in tablet form, were obtained. These variations probably result from individual differences in the subjects studied and may be related to the fluid balance (group *D*, table 1).

TABLE 2—*Rocky Mountain Spotted Fever in Delaware, Para-Aminobenzoic Acid Not Given*

	50 Cases (1936 1945)		21 Cases (1938 1946)		
Number of Cases	Number Died	Per Cent Died	No. of Cases	Number Died	Per Cent Died
Total (50)	14	28	21	5	24
23 over 40 yrs	12	52	6	3	50
27 under 40 yrs.	2	7	15	2	13

TABLE 3—*Comparison of Cases With and Without Para-Aminobenzoic Acid Therapy*

	Average Day of Disease Admitted to Hospital	Average Days of Con tinuous Fever	Average Day of Disease PABA Began	Average Days of Fever After PABA	Average Days of Fever After 7th Day
9 patients under 40 yrs with PABA	5 5	10 5	7 6	3	3 0
13 patients under 40 yrs without PABA	7 2	17 5	...	..	10 3

Parenteral administration of *p*-aminobenzoic acid may be desirable in the occasional patient who cannot retain the material by mouth or in the comatose patient who cannot swallow. As seen in chart 2, *p*-aminobenzoic acid is excreted rapidly when given intravenously. In the few instances when it must be given parenterally continuous intramuscular drip, as suggested by Woodward,[15] is probably the preferable method. A 25 per cent solution of sodium *p*-aminobenzoic acid in isotonic solution of sodium chloride is used. This solution is sterilized by filtration by a Seitz filter bringing the p_H to approximately 7 0 by the addition of small amounts of crystalline *p*-aminobenzoic acid to the solution of sodium *p*-aminobenzoic acid before filtration.

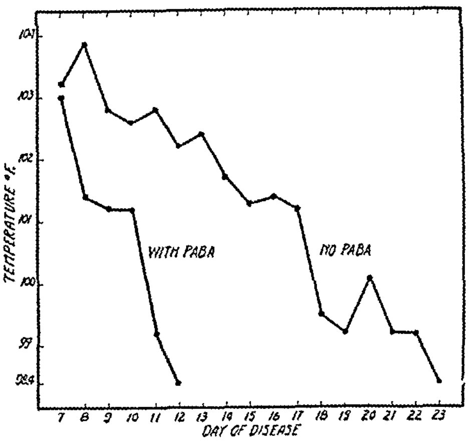

Chart 1—Comparison of average highest daily temperatures in 9 cases of Rocky Mountain spotted fever treated with *p* aminobenzoic acid, and in 13 cases not so treated.

DIAGNOSIS

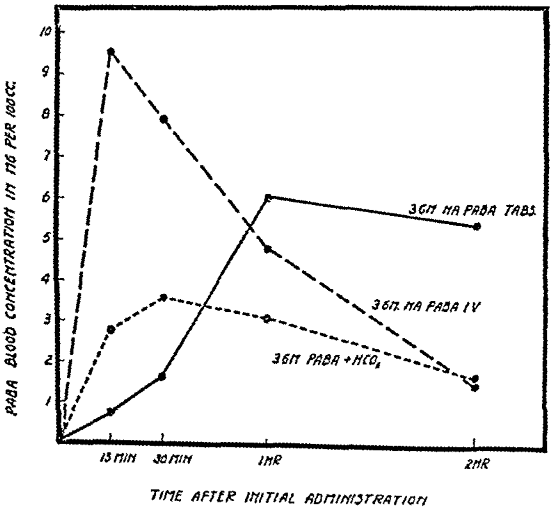

Chart 2—Result of eight clinical experiments in normal persons to determine blood levels when *p* aminobenzoic acid was given by mouth in 5 per cent sodium bicarbonate solution, when sodium *p* aminobenzoic acid tablets were given and when the sodium salt was given intravenously.

The great majority of the cases reported had all the criteria for diagnosis—tick bite, fever, typical rash and a changing agglutination titer for Proteus OX19. In a few cases the agglutination titer was not determined in the second week of the disease. In every such instance, however, the patient contracted the disease during the tick season in a locality known to be infected, and the rash was characteristic, occurring first on the wrists and ankles, then on the palms and soles and later spreading to the trunk. We consider that the diagnosis was correct in each case.

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[11] The Para Aminobenzoic Acid used in this work was furnished by Merck & Co, Inc, Rahway, N J. Tablets and Sterile Intravenous Sodium PABA were furnished by the International Vitamin Corporation, 22 East Fortieth Street, New York 19

[12] Bratton, A. C, and Marshall, E K, Jr: A New Coupling Component for Sulfanilamide Determination, J Biol Chem **128**: 537, 1939.

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ILLUSTRATIVE CASES

Certain details of the records of 3 of the treated patients will serve to illustrate important points in the clinical use of *p*-aminobenzoic acid. Case 28 (chart 3) shows a secondary rise of temperature presumably due to a too rapid reduction in the dosage of *p*-aminobenzoic acid after the initial clinical response of the patient. Not only was the dosage decreased, but the interval of the doses was increased from two to three hours. Tierney [2] reported similar occurrences in scrub typhus when the dosage was reduced too soon. In this instance agglutination and blood level studies were not performed. The diagnosis, although not definitely proved, is almost certainly correct. A swollen tick was removed from the patient three days before she became suddenly ill with fever, headache and prostration, and on the fourth day a typical rash appeared.

Cases 29 and 30 are of interest in illustrating the importance of the control of fluid balance, especially the urinary output, in maintaining the *p*-aminobenzoic acid level in the therapeutic range. In case 29 (chart 4) when the twenty-four-hour urinary output was between 250 and 500 cc., the *p*-aminobenzoic acid blood level was 46 and 48 mg. per hundred cubic centimeters on a daily dosage of about 12 Gm. Later, when the output was 1,500 to 1,600 cc., the blood level dropped to 10 and 4 mg. with a higher daily dosage of 20 Gm.

Again in case 30 (chart 5) with daily doses of 36 to 54 Gm. of *p*-aminobenzoic acid, the blood level ranged only from 7 to 12 to 5 mg. until the urinary output was reduced from 1,300 cc. to 500 cc. The level then promptly jumped to 39 mg.; and the temperature, which had been falling slowly, dropped abruptly. Smith [14] reported the use of *p*-aminobenzoic acid in 29 cases of endemic (murine) typhus. The results were certainly beneficial but not so striking as in Tierney's [2] cases of scrub typhus or in the cases of Rocky Mountain spotted fever here reported. Smith gave 2 Gm. of the drug every two hours routinely without measuring blood levels routinely. If blood levels were estimated daily at the same time interval, preferably two hours, after the preceding oral dose of the medicament and if more attention were given to the urinary output in order to maintain a blood level between 30 and 60 mg. per hundred cubic centimeters, perhaps a clinical response might be obtained in patients with endemic typhus comparable with that obtained in those with scrub typhus and Rocky Mountain spotted fever.

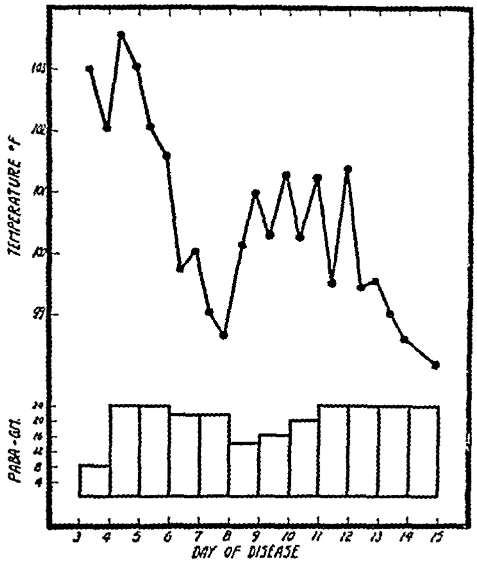

Chart 3 (case 28).—Secondary rise of temperature when dosage of *p* aminobenzoic acid was reduced too soon.

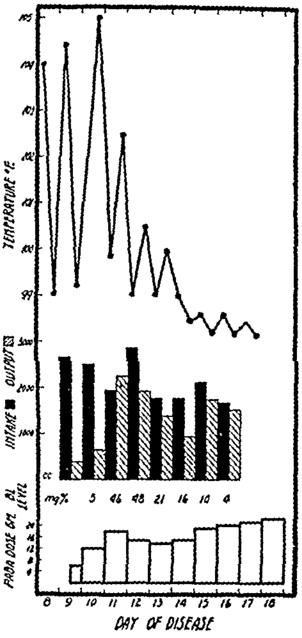

Chart 4 (case 29).—Showing a high blood level with a small dose of *p* aminobenzoic acid and low urinary output and a low blood level with a higher dosage of *p* aminobenzoic acid when the urinary output was increased

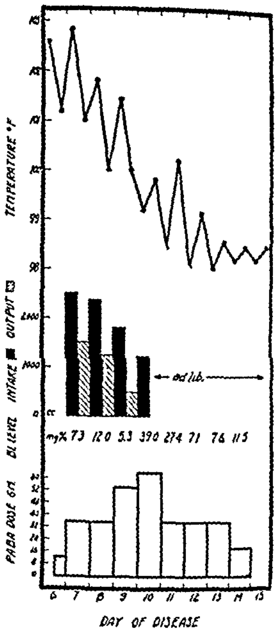

Chart 5 (case 30).—Showing difficulty in securing adequate blood level of *p* aminobenzoic acid until the urinary output was reduced.

The 1 fatality in our series was the only patient over the age of 40. He was aged 67 and refused admission until the eighth day of the disease, the fourth day of the rash. At this time he was mentally confused and had a blood urea nitrogen level of 60 mg. per hundred cubic centimeters. In spite of this he was able to swallow the *p*-aminobenzoic acid and absorbed enough to maintain a blood level of 48 to 80 mg. per hundred cubic centimeters for five days, when he died in uremia. At autopsy the kidneys were found to be small, granular and typical of long-standing renal disease. Evidently, therefore, he had had renal damage antedating the onset of his Rocky Mountain spotted fever. He also had had a previous myocardial infarction. This case may serve to illustrate the point that experimental work [16] has suggested—namely, that *p*-aminobenzoic acid retards or prevents the spread and proliferation of the rickettsias in the body but is not an antidote for any toxin already released and does not repair damage already done. Therefore the beneficial effect of the medicament in late cases is unlikely.

SUMMARY

1. Ten cases of Rocky Mountain spotted fever treated with *p*-aminobenzoic acid are reported and are compared with 21 control cases of Rocky Mountain spotted fever not treated with *p*-aminobenzoic acid.

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2. All 9 treated patients under 40 years of age recovered. One patient over 40 years of age with complications due to cardiorenal disease died
3. In 21 untreated patients there were five deaths—2 in patients under 40, 3 in patients over 40 years of age.
4. The length of fever in untreated patients was 17.5 days as compared to 10.5 days for those given *p*-aminobenzoic acid.
5. Most of the treated patients showed dramatic clinical improvement shortly after treatment began.
6. The *p*-aminobenzoic acid was administered without complication.
7. Because of the rapid urinary excretion of the compound, oral administration at one or two hour intervals is required to maintain therapeutic blood levels.
8. Individual variation in blood levels requires the adjustment of dosage and fluid balance
9. The tablet form of sodium *p*-aminobenzoic acid produced more prolonged and steadier levels of the drug in the blood in clinical experiments on 8 volunteers

CONCLUSION

Para-aminobenzoic acid was found to be most effective in the treatment of 10 cases of Rocky Mountain spotted fever in Delaware.

Clinical studies suggest that the level of p-aminobenzoic acid in the blood is best kept in the optimum range of 30 to 60 mg. per hundred cubic centimeters by adjustment of dosage and fluid balance in each individual case.

TOXIC REACTIONS ACCOMPANYING PENICILLIN THERAPY

W J MORGINSON, M D
Salt Lake City

Since Fleming's[1] observations on the antibacterial action of penicillium in 1929, toxic reactions produced by and accompanying the clinical use of this medicament have constituted an important part of the extensive literature on penicillin. The observations by my associates and me are incorporated in the various papers[2] from Bushnell General Hospital; the papers by Lyons,[2b] Keyes[2c] and Morginson[2i] particularly discuss toxic reactions. The findings made at Bushnell General Hospital agree with those of other authors and will not be listed separately.

In the short time at my disposal, it will be impossible to discuss in detail all the reactions that have been enumerated as following penicillin therapy. These are listed in the various tables. This paper will present salient observations concerning each group of symptoms. The adverse symptoms produced by penicillin may be grouped and will be discussed according to its role as (1) direct toxin and primary irritant, (2) antigen, (3) therapeutic shock excitant and (4) indirect action on pathologic processes.

DIRECT TOXIN AND PRIMARY IRRITANT

Crude and commercial penicillin is not a direct toxin in concentrations permitting its therapeutic use. Fleming[1] was the first to show that subcutaneous and intraperitoneal injections and irrigations of large surfaces and of the conjunctivas had no ill effects. Subcutaneous injections in mice, rats and cats produced no sloughs, and blood concentrations to 5,000 units per cubic centimeter had no deleterious effects.[3] In mice, the toxic dose is about sixty-four times the effective dose as determined by subcutaneous injections of crude penicillin.[4] A wide variance in lethal doses for mice, ranging from 3,500 to 32,000 units, was observed when three hundred lots from fourteen manufacturers were tested.[5]

Human leukocytes remain active in 1,000 units per cubic centimeter for at least three hours.[6] Daily doses of 400,000 units in experimental animals produced no injury to kidneys, liver, bone marrow or brain[7] and low toxicity for tissue cells as measured by means of in vitro methods of tissue culture.[8] Apparently there is no disturbance of the peripheral blood or hemopoietic system, and penicillin can be used in the presence of pronounced anemia, leukopenia and agranulocytosis.[7b]

It has not been determined whether the minimal direct toxic action of penicillin depends on impurities contained in the corn mash or steep, chemicals used to remove pyrogens or other products in commercial penicillin, as little comparative work has been done on the toxicology of crystalline penicillin. Purification, apparently, reduces toxicity.[3b] The toxic action does in part depend on the cation radical, as intravenous toxicity in mice increased progressively with the use of the sodium, ammonium, strontium, calcium, magnesium and potassium salts.[9] Gottschalk and Weiss[10] stated that commercial penicillin is not a primary cutaneous irritant.

For practical purposes the possibilities of penicillin as a direct toxic agent are negligible[11] except, as will be noted, following its intrathecal use

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From the Section of Dermatology and Venereal Diseases, Medical Service, Bushnell General Hospital, Brigham City, Utah, and Division of Dermatology, Department of Medicine, University of Utah School of Medicine

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ANTIGEN

Experimental evidence and clinical observation indicate that commercial penicillin and crystalline penicillin possess definite antigenic and allergenic properties.[12] These may be excited by impurities encountered in commercial penicillin, pyrogens, chemicals used to remove pyrogens and crystalline penicillin.[13] It is generally conceded that antigenic reactions are becoming less frequent as impurities are removed from commercial penicillin; the early, dark-colored products seemed to produce more frequent and violent reactions than the later, clearer solutions.[14] Cormia and colleagues, however, stated that no correlation could be observed between the color of commercial penicillin and toxicity.[15] Many of the impurities can be removed by Seitz filtration.[16] Reactions are probably due to impurities when different lots and products of different manufacturers fail to repeat symptoms or give negative reactions to sensitivity tests.[15b]

TABLE 1—*Reactions Produced by Antigen Properties of Penicillin*

1 Erythema blotchy, diffuse, morbilliform, scarlatiniform, flushing of face, dermatitis *medicamentosa, exfoliating* dermatitis	2. Urticaria sparse, mild, diffuse, massive, transient, acute, chronic, pruritic
3 Angioneurotic edema localized, lips, eyes, tongue, uvula, pharynx, epiglottis, larynx, diffuse, solid	4. Erythema multiforme, erythema nodosum, edema of joints, polyarthritis, painful adenopathy, myalgia
5 Malaise, headaches, generalized aching, chills, fever, nausea and vomiting, abdominal cramps	6 Dyspnea, pulmonary edema, acute syncope, shock
7 *Dizziness, vertigo, muscular* twitching, convulsions, loss of consciousness	8 *Euphoria and laughing,* psychotic depression, agitation, confusion, nervousness
9 Epistaxis, petechiae, purpura, regional angiitis	10 Eosinophilia, pseudoalbuminuria, hematuria, azotemia
11 Tingling in testes, epididymitis	12 Thrombophlebitis
13 Exacerbation latent trichophytosis, trichophytids, dyshidrosis	14 Photosensitization
15 Drug and serum sickness like syndrome	16 Precipitated latent epilepsy

Sensitization attributes of commercial penicillin have been demonstrated by positive intradermal reactions,[17] by indirect or passive transfer tests of Prausnitz-Kustner,[18] by precipitin reactions [13a] and, in guinea pigs, by Schultz-Dale tests.[19] Positive intradermal reactions,[20] Prausnitz-Kustner reactions [13d] and positive Arthus phenomena [13b] are observed with crystalline penicillin. Heterophil agglutinins have been reported increased by Lyons [2b] and not increased by Cormia.[15a] The latter author also stated that precipitin and passive transfer tests furnish variable results and that conclusive evidence of circulatory antibodies has not been demonstrated. Patch tests have elicited positive reactions to commercial penicillin [21] and to crystalline penicillin.[21a]

Sensitivity to penicillin may be manifested as immediate reactions and delayed reactions.[15a] The immediate reactions usually occur in persons with a known history of penicillin sensitivity or at least previous exposure to penicillin, although a small percentage of the population is primarily or spontaneously sensitive to penicillin.[22] It is doubtful if natural, inherited sensitivity, without previous exposure, exists, because contact may have been intrauterine or the patient may possess a general sensitivity to molds.[23] Herrell, Nichols and Heilman [7b] and others [24] have demonstrated the transmission of penicillin through the placenta from the maternal to the fetal circulation. Jadassohn, Schaaf and Wohler,[25] working with trichophytins, by the Schultz-Dale technic, concluded that fungi have a common antigenic factor in addition to antigenic factors peculiar to each species. Persons may be sensitive to penicillin because they possess a common sensitivity to all molds. Cormia [15a] and Lamb [18a] stated the belief that an exacerbation of a previous fungous infection or vesicular eruptions involving the feet, hands and groins following penicillin therapy may represent this common antigenic factor to molds.

Delayed or acquired sensitivity may be produced by repeated intradermal injections of penicillin [20] or by repeated local applications [10a] and is analogous to drug or serum sensitivity.[26] Sensitivity to penicillin may be of short duration or it may last for considerable periods, even months, and it is conceivable that it may be permanent.[13a] Toxic symptoms may not be noticed until several weeks following continuous injections.[13d] The antigenic potentialities may be latent, requiring lowering of allergic resistance and augmentation with other antigens to present symptoms.[27]

Penicillin sensitivity may be epidermal [28] or dermal,[15a] although the principal shock tissue seems to be the vascular system.[15a] Gottschalk and Weiss [10a] expressed the opinion that epidermal sensitizations do not predispose to dermal or vascular sensitization; however, severe systemic involvement was encountered in Cormia's [15a] patients following local application of penicillin. If local applications can produce generalized sensitivity, as seems possible, a word of caution should be made against the injudicious use of penicillin locally.

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[28] Gottschalk and Weiss [10] Cormia and colleagues [15a]

Allergic symptoms following penicillin therapy are usually mild, of low incidence and transient. Several authors have recommended that treatment be continued after their appearance and have minimized their seriousness.[29] Others are more cautious and have emphasized that heed should be given to these manifestations, as persistence with treatment might lead to severe, alarming and serious reactions.[30] Wile [31] considered that severe angioneurotic edema and edema of the pharynx, larynx and lungs, known to accompany penicillin therapy, are serious and may be fatal complications. Lamb [15a] expressed the opinion that each patient should be questioned regarding history of allergy, history of previous penicillin sensitivity and history of trichophytosis or other fungous infections. When a patient is sensitive to crystalline penicillin, as may be shown by cutaneous reactions or suspected when different lots or products of different manufacturers produce symptoms or give positive reactions, continued therapy should be used with extreme caution or only after desensitization, as severe reactions may be anticipated.[30b] Kolodny and Denhoff [13d] stated that dermatologic patients possess a higher sensitivity rate than other patients.

THERAPEUTIC SHOCK

Therapeutic shock or Jarisch-Herxheimer reaction symptoms incident to the therapeutic use of penicillin in the treatment of syphilis are frequently encountered [32] and are considered evidence of the efficacy of penicillin.[33] Focal reactions are manifested by intensified chancre and other cutaneous lesions within eight to twelve hours or delayed for days in tissues of low vascularity, as in osseous syphilis. If treatment is started in the seropositive primary stage, before objective symptoms other than serologic are present, a profuse secondary rash may develop. Systemic reactions produce malaise, generalized aching, painful adenopathy, chill and elevation of temperature to 103 F. The symptoms usually subside within twenty-four to forty-eight hours, and treatment may be continued without interruption. If symptoms do not subside within a reasonable time, production factors other than therapeutic shock must be considered.

A Herxheimer reaction can be avoided by early reduced dosage of penicillin. It should be avoided in certain types of syphilitic infections, as in those of debilitated or toxic persons,[7b] particularly infants,[29d] and in late syphilis, gummatous, cardiovascular [34] and that of the central nervous system.[35]

Therapeutic shock symptoms occurring during the routine treatment of gonorrhea in which syphilis is not diagnosed or suspected or before the serologic reaction becomes indicative are considered diagnostic or at least suggestive of concurrent syphilitic infection.[36] Fever following the use of purified penicillin is rare and should arouse a suspicion of a Herxheimer reaction and syphilis.[37] Calloway and associates [38] did not consider that divided early dosage prevents fever. Therapeutic shock symptoms have followed the treatment of syphilis with oral administration of penicillin.[39] The incidence of Herxheimer reactions is high, 86 per cent [40] and 91.6 per cent having been reported.

Table 2.—*Toxic Reactions to Penicillin Produced by Contact (Epidermal) Sensitivity*

Dermatitis (venenata): erythematous, circumscribed pruritic, mild, severe, vesicular, bullous, edematous, weeping, exfoliating	Cheilitis Conjunctivitis Scleritis Blepharitis Glossitis Edema of the penis and scrotum

Table 3.—*Penicillin Produces Therapeutic Shock Reactions*

I. Focal
    Exaggeration of cutaneous lesions; increased swelling, redness and discharge of chancres; enlarged regional adenopathy; precipitation of secondary lesions; increased pain in bones

II. Systemic
    Malaise, chills, fever, nausea, vomiting; urticaria, erythema multiforme, morbilliform and scarlatiniform erythema; hoarseness, dyspnea, asphyxiation; myelitis, pseudoencephalitic syndromes, cranial nerve injuries, convulsions, coma, exaggeration of lightning pains; hallucinations, mania; cardiac embarrassment, ruptured aneurysm

INDIRECT ACTION ON PATHOLOGIC PROCESSES

The harmful effects following penicillin therapy on pathologic processes, which Stokes [41] called "paradox reaction of healing" and "therapeutic paradox," should

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40. Mahoney, J. F.; Arnold, R. C.; Sterner, B L.; Harris, A., and Zwally, M. R: Penicillin Treatment of Early Syphilis, J. A. M. A. **126:** 63 (Sept. 9) 1944

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be considered. In late syphilis of the heart, too rapid healing of a coronary lesion by penicillin may produce deforming sclerosis and atresia so rapidly that no compensation can take place. This is a different process and independent of cardiac embarrassment following acute local vascular edema of the Herxheimer reaction. "Rapid healing with fibrosis in the liver results either in a diffuse contraction or localized deformities which affect the patient by obstructing his portal circulation, with resultant ascites, or by producing severe intractable jaundice."[41] Divided and cautious early therapy with penicillin will permit some degree of physiologic adjustment.

REACTIONS FOLLOWING INTRATHECAL ADMINISTRATION

Apparently penicillin has a direct irritating effect when applied to the central nervous system, and this property is contained in penicillin and crystalline penicillin rather than in the impurities. Walker and Johnson[42] showed that seven commercial penicillins administered intracisternally, intraventricularly and locally to the cerebral cortex produced convulsions and death due to vascular collapse in mice, cats, dogs and monkeys and that intracortical injections produced convulsive seizures in human beings. One hundred thousand units in 20 cc. of isotonic solution of sodium chloride produced cyanosis, irregular respirations and convulsions with temperatures to 104 F. and signs of vascular collapse in an infant.[43] Neymann, Heilbrunn and Youmans[44] stated that penicillin is toxic when it comes in direct contact with the surface of the brain, producing, as acute effects, headache, tenseness, muscular twitching, convulsions and cyanosis and, as chronic effects, meningeal irritation, rigidity of the neck and positive Kernig and Brudzinski signs. All symptoms were reduced after diminished dosage and particularly with concomitant use of barbiturate sedatives.[42c] Intrathecal reactions are apparently due to high dosage rather than to concentration of the drug and are not due to acidity or alkalinity of the solution, as sodium chloride and 95 per cent alcohol did not reproduce the symptoms.[45] The convulsive factor is related to the antibiotic properties of penicillin rather than to impurities, as convulsive seizures diminished directly proportionally to the destruction of the antibiotic properties by aging, boiling and acidifying and by dissolving penicillin in alcohol.[42a] There is a species factor in convulsive effects, as the threshold for monkeys is lower than that for cats.[42a] Crystalline penicillin produced the same reactions when used intrathecally.[42c] Five thousand units applied to the occipital cortex in human beings showed no clinical or electroencephalographic abnormalities, whereas 20,000 units produced encephalographic changes. Application of 10,000 units to the motor area resulted in twitching of the face and hands for three hours.[42a]

TABLE 4.—*Reactions Following Intrathecal Administration of Penicillin*

Listlessness
Headache
Nausea
Vomiting
Cold, clammy skin
Vascular collapse
Irregular respirations
Cyanosis
No blood pressure
Thready pulse
Muscular twitching
Clonic spasms
Flaccid extremities
Stiffness of neck
Convulsions
Comatose
Unconsciousness
Electroencephalogram changes
Spinal fluid cell count, globulin, albumin increased in nonsyphilitic patients
Positive Kernig sign
Positive Brudzinski sign

The convulsive effects of penicillin should not detract from its clinical intrathecal use when indicated, as the therapeutic dosage is usually below that which produces convulsions.[42c] A normal patient shows no reactions to doses from 3,000 to 5,000 units.[46] Patients have received from 20,000 to 100,000 units without reactions; however, the higher dosage should be used with caution.[47] Neymann, Heilbrunn and Youmans advised no dosage above 30,000 units.[44] It is noted that no reactions have been reported when penicillin is applied directly to wounds or abscesses in the central nervous system. This may be due to impaired diffusion of the drug through the walls of granulation tissue to adjoining nerve tissue.[42a]

From our present knowledge, reactions following administration of penicillin to the central nervous system are due to irritative, rather than allergic, therapeutic shock and paradoxic therapeutic reactions. Symptoms produced by these different types of reactions should not be confused.

CONCLUSIONS

1. Penicillin may produce reactions due to its action as (*a*) direct toxin and primary irritant, (*b*) antigen, (*c*) therapeutic shock excitant, and (*d*) indirect action on pathologic processes.

2. Salient observations concerning each action group are discussed.

3. Tables are presented listing toxic reactions encountered in each group.

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ABSTRACT OF DISCUSSION

DR. HAROLD M. JOHNSON, Honolulu, Hawaii: It is gradually being realized that penicillin is not an innocuous drug. Two years ago, statements were made regarding the lack of toxicity and sensitizing effect. Now it is common to see new cases in which the reactions are mild to severe. In cases of the severe reaction, patients have stated that they would rather have their previous infection than penicillin therapy. The usual allergic reactions are mild and transient. Parenteral therapy has been continued in these cases. In the contact eczematous reactions, therapy was immediately discontinued. Usually the person can tolerate a fever, headache and bone-joint pain, but the itching and burning of epidermal sensitization require quick removal of the preparation. In 1944 a large drug firm stated, "The untoward reactions early attributed to penicillin unquestionably were in direct proportion to the toxic impurities rather than due to the penicillin." Recent reports appear to refute this

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42. (*a*) Walker, A. E., and Johnson, H. C.: Convulsive Factor in Commercial Penicillin, Arch. Surg. **50:** 69 (Feb.) 1945; (*b*) Intraventricular Penicillin: A Note of Warning, J. A. M. A. **127:** 217 (Jan. 27) 1945. (*c*) Walker, A. E.; Johnson, H. C., and Kallros, J. J.: Penicillin Convulsions: The Convulsive Effects of Penicillin Applied to the Cerebral Cortex of Monkey and Man, Surg., Gynec. & Obst. **81:** 692 (Dec.) 1945.

43. Simon, S. M.: Untoward Effects of Penicillin: Prophylactic Use in Spina Bifida Operations, Clin. Med. **52:** 87 (March) 1945.

44. Neymann, C. A.; Heilbrunn, G., and Youmans, G. P.: Experiments in the Treatment of Dementia Paralytica with Penicillin, J. A. M. A. **128:** 433 (June 9) 1945.

45. Rosenberg, D. H., and Arling, P. A.: Penicillin in the Treatment of Meningitis, J. A. M. A. **125:** 1011 (Aug. 12) 1944. Walker and Johnson.[42a]

46. Rammelkamp, C. H., and Keefer, C. S.: The Absorption, Excretion and Toxicity of Penicillin Administered by Intrathecal Injection, Am. J. M. Sc. **205:** 342 (March) 1943.

47. Worth, L. H.: Staphylococcal Leptomeningitis Treated with Intracisternal Penicillin, Lancet **2:** 634 (Nov. 17) 1945. Walker and Johnson.[42a]

statement somewhat. Now patients allergic to one brand are allergic to the administration of penicillin from another manufacturer. Penicillin, a complex organic formula, could have increased its sensitizing ability by the manufacturer's change to newer commercial penicillin. It is possible, as Dr. Morginson stated, that persons may be sensitive to penicillin because they possess a varied sensitivity to all molds. This may well be the explosive factor seen in the exacerbation of a previous fungous infection. It is believed that a substantial percentage of the population is sensitive to crystalline penicillin sodium despite the fact that these persons have had no previous contact with this material. Theoretically this mold is ingested or inhaled, producing in susceptible persons a mild reaction with later changes in their immunologic responses. A few simple rules may help prevent reactions, such as the reduced dosage during the first six to twelve hours or even twenty-four hours, depending on the urgency in the case. The importance of the Herxheimer reaction to penicillin is proportional to the physiologic importance of the tissue involved. It is suggested that the patient be questioned regarding previous history of eczema, especially seborrheic, personal or familial, and history of cutaneous hypersensitiveness and chronic urticaria. Nine times out of ten these questions are never asked. Much grief by the patient and the physician could be avoided. Benadryl and Pyribenzamine (N'pyridil-N'benzyl-N-dimethylethylenediamine) can be used to alleviate the urticarial serum sickness-like reaction. If given early a great amount of discomfort can be eliminated. The dosage of Benadryl must be high in the severe reactions and frequently repeated. The drowsiness encountered can be fairly well controlled by oral administration of amphetamine sulfate. In a small series of cases I have been able to avoid the described reactions by the prophylactic administration of Benadryl, 100 mg. three times daily, during parenteral therapy and ten days following the ceasing of penicillin therapy.

Dr. Ben A. Newman, Los Angeles: The cutaneous reactions caused by penicillin are particularly important since penicillin is being more and more prescribed for comparatively minor infections (and even noninfections) of the skin and mucous membranes. The sequence of events that precipitated the innumerable sensitizations during the past decade of sulfonamide therapy is already being duplicated. Those who served with large military hospitals were impressed with the low incidence of reactions to penicillin. Its use in the armed forces was chiefly limited to the sulfonamide-resistant pneumonias, to the more serious surgical or medical infections and to the treatment of syphilis and gonorrhea. Generally the patients had never received penicillin previously, and the reaction rate did not exceed 2 or 3 per cent. This is in accord with the earlier reports on the use of penicillin On the other hand, in a group of patients I treated with penicillin for chronic infectious or eczematoid dermatoses the reaction rate exceeded 30 per cent. Although penicillin reactions from topical therapy in the acute infectious dermatoses have so far been minimal, I am willing to predict an increase in such reactions as more and more of the population are exposed to penicillin. Since my return to civilian practice, in addition to the many local contact dermatoses I have seen many instances of generalized urticarias, generalized erythemas and morbilliform rashes, vesicular eruptions and generalized eczematous eruptions from such use of the drug. Generally, these have occurred in patients who received penicillin in a previous instance. Experience among most dermatologists has shown that the use of penicillin externally in the form of an ointment or cream is of value only in the most superficial infections, that is, the impetiginous lesions. For deeper infections of skin or mucous membranes, topical applications are of limited value. The treatment of superficial impetiginous infections with topical application of penicillin does not appear to be superior to the therapies that have been used heretofore. Of even greater importance than cutaneous reactions from the topical use of penicillin is the probability that this usage of the drug will sensitize a large number of persons. Obviously, this is likely to prevent or complicate the administration of penicillin for serious systemic or organic infections. Penicillin is now available in the form of ointments, mouth washes, lozenges, lotions and first aid dressings as well as in the parenteral and oral forms. Its indiscriminate use for local infections of the skin and oral mucosa is to be condemned for the following reasons: first, the uncertain and questionable results over formerly established remedies; second, the potential hazard of sensitizing the patient to penicillin, and, third, the danger of precipitating untoward reaction in a previously sensitized patient.

Commander E. E. Barksdale, Bethesda, Md.: I entirely agree with the author and congratulate him on a worth while presentation. I should like to report some observations made by the Penicillin Control Committee at the Naval Medical Center during the past four years, during which time over 20,000 patients received penicillin for one condition or another. Craig and the other members of the committee reported the observations on the first 2,000 patients treated early in 1944; no reactions were reported other than those observed as mild Herxheimer reactions occurring in the treatment of early syphilis. Such is not the opinion of the committee at the present time. It is our opinion that the over-all reaction rate of penicillin is approximately 8 to 10 per cent. I should like to report also one death from exfoliative dermatitis. The case will be reported in the literature. The man was not a syphilitic patient but a patient with cellulitis who had been previously sensitized to penicillin while at sea. When admitted to this hospital with cellulitis, we knew that he was sensitive, but he was also sensitive to sulfonamide drugs. He was given 100 units of penicillin every three hours. At the end of the seventh dose, administration of it had to be discontinued because of a severe cutaneous eruption which went into a generalized exfoliative dermatitis, streptococcic septicemia and death. In addition to what the author has reported, we have observed several cases of neuritis and have frequently had complaints of pain in the peroneal nerve. We have had 5 cases of complete foot drop. I do not think that this is an allergic reaction; exactly what it is we are unable to explain. Fortunately, all 5 cases of foot drop did clear up on physical therapy, but 2 of them took five months to do so. When we first thought of using penicillin in the skin department of the Naval Hospital at Bethesda, about 80 to 90 per cent of the patients on the ward were getting local penicillin in one form or another, either ointment or wet dressings. At present there is not one patient on local penicillin. In my opinion, penicillin locally in any form is absolutely contraindicated. I agree with Flippen of Philadelphia in that I think that penicillin locally can sensitize a person so that he cannot take it intramuscularly or otherwise. I see no advantage of the local application over the intramuscular injections, either in oil or in aqueous solution.

Okinawans.—These examinations were made at a military government hospital from June 13 to July 30, 1945. Death was due to combat injuries in 100 cases, to noncombat (chiefly medical) causes in 36 and to a combination of war injuries and medical conditions in 14. . . . The most striking finding was the low incidence of retrogressive and degenerative changes. Senility came late, and cardiac and skeletal muscles remained well preserved even in the aged. Arteriosclerosis also developed late and to a moderate degree or not at all, and its lethal sequels in the brain, the kidneys and the heart were never seen. Hypertensive cardiovascular-renal disease was not seen except for 1 case of the type associated with toxemia of pregnancy. In fact, heart disease of all types, including congenital, rheumatic, bacterial endocarditic, syphilitic, hypertensive and coronary arteriosclerotic, was uncommon or absent. Renal diseases of all types were rare. Although cirrhosis of the liver was common, disease of the biliary tracts, including cholelithiasis, was not. After the life of these people had been studied, two possible etiologic factors appeared outstanding in explanation of these observations. They were (1) a low tension, placid, although physically strenuous, life and (2) a simple, predominantly vegetarian diet.—Steiner, P. E.: Necropsies on Okinawans, *Arch. Path.*, October 1946.

Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association
and Hygeia, the Health Magazine
Chicago

(Continued from page 854)

(NOTE.—*Following is the sixth chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of THE JOURNAL. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in THE JOURNAL. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—ED.)

CHAPTER 6. 1849-1852

1849

BOSTON

In the amphitheater of the Massachusetts General Hospital in 1846 Dr. John Collins Warren had done the first public operation under ether anesthesia. At the meeting of the American Medical Association in 1849, held in Boston, he served as chairman of the committee of reception of the Massachusetts Medical Society; he was nominated President of the American Medical Association for the ensuing year. Whether or not there was any direct association between these facts there is, of course, no way to determine. The Association was still holding its sessions by a technic which involved the formation of special committees on such subjects as surgery, forensic medicine, indigenous botany and hygiene, but the primary interest was still the reform in medical education. The convention reiterated its approval of the resolutions on this subject adopted by the convention that met in Philadelphia in 1847. The attention of all the medical colleges was called again to the report on preliminary education. Already some agencies were endeavoring to find a substitute for clinical instruction in the hospital; a resolution was offered that the Association did not sanction or recognize college clinics as substitutes for hospital clinical instruction.

Significantly it was now agreed that state medical societies should be formed in every state in which they did not exist and that the societies should admit to their membership only those who had obtained degrees in medicine and had been licensed by a recognized licensing body.

Progress was made also in the resolution which encouraged all the schools of medicine to meet at Cincinnati before the next annual meeting of the American Medical Association and to present a plan for elevating the standard of medical education. These were the preliminary steps toward the high standard that was ultimately to prevail in the advancement of American medicine.

An innovation was the establishment of standing committees to undertake measurement of progress in each important medical field. To this resolution were appended the words "giving special attention to such as may be American." The committees included a Committee on Arrangements, Anatomy, Physiology, Materia Medica, Chemistry, Pathological Anatomy, the Principles and Practice of Medicine, of Surgery and of Obstetrics, Hygiene and Sanitary Measures, Forensic Medicine, Medical and Vital Statistics, American Medical Biography, Medical Education and Publication. These subjects of main interest were to be modified from time to time with the progress of medical science and with the advancement of knowledge in each of these specialties. Gradually anatomy, physiology, chemistry and pathology were to be directed for their scientific considerations primarily to special societies formed specifically for such purposes. Hygiene and sanitary measures, which were particularly the problem of the medical profession, were to be absorbed in the great field of public health administration. Medical and vital statistics became functions eventually of the Bureau of Census and the U. S. Public Health Service. American medical biography was to be merged gradually into the Directory of the American Medical Association. But in this formative stage each of these topics was considered of equal interest with every other; there was but one organization to give proper consideration to all of them.

Rather amusing in view of the present stage of medical education in the United States was the submission by the faculty of medicine of Harvard to the Committee on Medical Education of an elaborate defense of the limitation of the courses of medical instruction in the schools to four months—a limitation seriously opposed by the committee itself. A committee was appointed to prepare at leisure a statement of the facts and arguments which may be adduced in favor of prolonging the courses to six months.

Well in advance of their time also were resolutions indicating that the state medical associations in east Tennessee and New York had developed a series of popular lectures designed to enlighten the public mind in relation to the new position of medical men in relationship to society; it was urged that the American Medical Association recommend medical men in all associations, individually, by public lectures and otherwise, "to enlighten the public mind in regard to the duties and responsibilities of the medical profession and their just claims to the confidence of the public." Eighty years later the continuing demand for suitably informing the public caused the formation of a division of public relations in the American Medical Association.

Although but two years had passed, many members were beginning to get a little weary of the length of time required to read the annual reports. Their attention was called to the fact that the constitution merely required them to report on the progress of medicine in this country alone and only during the year of their service.

Realize too that, although the time was almost a hundred years ago, a resolution was offered requesting the Committee on Practical Medicine to inquire into the expediency of adopting the English language exclusively in the writing of prescriptions and in all directions for the composition and administration of medicines. This reform has still not reached the stage of majority approval.

These in the year 1849 were the chief interests of the American Medical Association from the point of view of its social, political and economic relationships. The reports of its special committees, however, merit at least a word because of some extraordinary interests. There was a report on the anatomy of the dodo, supposed by some to be a fictitious creation. It seemed, however, that the British *Forensic Medical and Chirurgical Review* of the previous year had published a report that this bird was not fictitious but that it was instead a massive and clumsy bird and that "we cannot form a better idea of it than by imagining a young duck or gosling enlarged to the dimensions of the swan." An investigator was convinced that there was no free hydrochloric acid in the gastric juice, and another insisted that there is nothing whatever to phrenology. Cholera was the major epidemic disease, and a gynecologist was treating dysmenorrhea by dilating the cervix of the uterus. A woman in Kentucky tried to poison her baby by giving it powdered glass, and another woman sued the doctor sixteen months after the baby was born because "he had placed hands upon her person." This action resulted from reading a book which was an attack on male obstetricians. There were extensive reports on the use of ether for anesthesia and a conclusion that all the accidents from anesthesia in the United States had resulted from the inhalation of chloroform. There had been 13 deaths from anesthesia by use of surgeons, 2 by dentists and 2 by people who had breathed chloroform for its pleasurable reactions. Typhoid raged rather widely, as did also an epidemic of streptococcic sore throat called angina, and several outbreaks of dysentery and intestinal disturbances. Cerebrospinal meningitis appeared in epidemics in a good many places, as did yellow fever.

The Committee on Surgery concerned itself also chiefly with anesthesia. Dr. J. Mason Warren had operated in a case of imperforate anus, but the progress of surgery was minute indeed. The Section on Obstetrics was chiefly concerned with misplacements of the uterus, but there was an extensive discussion on ovariotomy, which was spoken of as "this tremendous operation."

There are pages devoted to the right of the physician to use an anesthetic in labor. To this the committee wisely concluded that, "in the more severe obstetric operations, not only may anesthetics be rightfully given but they may not be rightfully withheld."

Extensive indeed was the report of the Committee on Medical Education, which offered a survey of medical education in the countries of Europe and a comparison of their education with the education offered in each of the medical schools of the United States. The continuous publication of such analyses of medical education has been one of the most potent factors in raising the standard of medical education in the United States.

The interest in public health caused the publication in the Transactions of that year of an analysis of the sanitary conditions in many of the most important cities and areas in our country. These pages constitute a source book for those interested in the progress of public health. The report from New Orleans is especially interesting in its attack on inebriety as a means of injury to the public health but more particularly in its endorsement of health education. In presenting the sanitary report of New Orleans, Dr. Edward H. Barton twice repeated the statement of Benjamin Rush that the medical profession was from twenty to thirty years ahead of the public in information in relation to health and that it required about that amount of time for the public to become sufficiently enlightened to realize the value of hygienic laws, observances and improvements.

Reports on drugs and indigenous botany occupied hundreds of pages which would be of little practical value to the physician of today with his specific synthetic chemotherapy.

One consideration for the Association was the question as to whether or not the introduction of water and gas into cities should be under the control of private agencies or municipal agencies.

As the convention came to its close, Dr. Thomas Wood presented a resolution requesting the Committee on Medical Science "to inquire into the expediency of establishing a board to analyze the quack remedies and endorsement now palmed upon the public and to publish the results of their examinations in a newspaper to be established for the purpose; and, further, to append such plain views and explanations thereto as will enlighten the public in regard to the nature and dangerous tendencies of such remedies."

1850

CINCINNATI

The year 1850 saw the convention moving as far west as Cincinnati, and an Ohio physician, Dr. Reuben D. Mussey, was chosen President.

The earlier resolutions on education had begun to bear fruit. A resolution of thanks was tendered to the faculties of the University of Pennsylvania and to the College of Physicians and Surgeons of New York and to all "other institutions which may have conformed to our recommendations." But medical education was still the most troublesome problem. One resolution demanded that young men be not admitted to medicine unless they had good moral character and had exhibited evidence of a good education. Daniel Drake amended this to demand "that the medical schools of the United States should require pupils to remain till the end of the session, whatever may be its length, except when permission may be given to depart," indicating that a good many boys who enrolled departed when the harvesting season or some other similar project demanded their presence elsewhere. Health education of the public was still a desirable object, and Dr. Austin Flint suggested that a popular address on some medical subject should be annually delivered at this Association before the citizens of the place in which the meeting is held. A few scientific papers were read, one the exhibition by Dr. Evans of Chicago, then professor of obstetrics in Rush Medical College, of a device which he called an obstetrical extractor, which he demonstrated on a manikin, and another by Nathan Smith Davis with the peculiar title "Has the Cerebellum Any Special Connection with the Sexual Propensity of Function of Generation?" This proved that there is nothing scientific about phrenology.

A resolution was passed condemning the clerical profession for "often—though, perhaps sometimes, unwarily—yielding their extensive influence in the community in giving currency to quackery and quack medicines."

Again in advance of public opinion and the times, another resolution proposed "that this Association regard it as contrary to its system of ethics for medical journals to advertise nostrums or secret remedies although their composition may have been made known to the editor."

The Association urged its support to the international copyright law. The Committee on Publications again recommended that the medical profession create its own medical literature rather than be subservient to that of England.

A group welcomed the action of the government which proposed to confer military rank on medical officers of the Army.

The meeting, being in Cincinnati, the Transactions are obviously a little less in scope and quantity than those of meetings held in the East nearer the great centers of population.

The Committee on Medical Literature called attention to the fact that a good many editors had already withdrawn to other departments of professional labor, some had tired of their ill paid toils and thankless duties, and some had been snatched away by the hand of death. For each of these losses the committee expressed its sense of bereavement. Already there were complaints that there were too many medical journals. The committee felt that the average value would be enhanced were the quantity reduced one half. Some of the medical journals, it seemed, had been established by gentlemen connected with medical schools and for the purpose mainly of sustaining the latter. Although the journals published at a distance from great medical centers were uniformly weak, the committee thought that they ought to be encouraged since their difficulties to exist were so great. The committee felt also that "it speaks but feebly in praise of our physicians as scientific investigators, that there are but two experimental memoirs of any importance contained in the journals of the last year." Incidentally one of these dealt with the actions of poisons and the other with the nervous system of the alligator.

Indeed the annual analysis of the medical literature of the day, which had come to be a regular feature at meetings of the American Medical Association, was significant in the gradual improvement in its quality. There is an essay on the functions of the critic or reviewer which might well be an inspiring text to any one essaying that thankless task in modern times. Analyzing the books that had been published in the previous year, the committee felt that the most extensive and important was the first volume of Dr. Daniel Drake's "Treatise on Diseases of the Interior Valley of North America." Incidentally, as an appendix to the report there is a complete bibliography of original articles of interest published in American journals between May 1849 and May 1850.

There follow the usual analyses of medical literature and of medical progress in a variety of fields, with a notable essay by J. Collins Warren on the use of anesthetics. This pointed out that already in his amphitheater in the Massachusetts General Hospital more than a thousand etherizations had been done without an unfortunate result. The introduction of anesthesia had permitted surgical operations not previously possible. J. Collins Warren reported also a number of operations for the removal of cancers and other tumors.

1851

CHARLESTON, S. C.

The fourth annual meeting convened in Charleston, S. C., in 1851. Dr. Alfred Stillé, who had served as secretary of the Association and who had written the memorable report on literature of the previous year, had been compelled to tender his resignation because his health had forced him to seek relaxation abroad.

Conspicuous among those who gave direction and impetus to the work of the American Medical Association during the formative years was Dr. Alfred Stillé of Philadelphia. Dr. Stillé was the son of Swedish emigrants, a graduate of Yale University in 1832 and of the University of Pennsylvania with an A.M. in 1835, the M.D. in 1836 and the LL.D. in 1839. Following his graduation in medicine he became house physician at Blockley under W. W. Gerhard. In association with Gerhard, he is credited with being among the first to make a clear distinction between typhoid fever and typhus. The great epidemic of typhus in Philadelphia in 1836 gave him opportunity for many postmortem examinations which permitted him to make a clear distinction between the two conditions and ultimately to convince the British physicians who had refused to accept such a distinction. In 1854 he became professor of the practice of medicine in the Pennsylvania Medical College, and in 1864 he succeeded the first Dr. Pepper in the chair of medicine at the University of Pennsylvania. He was the first secretary of the American Medical Association, and he was rewarded with the presidency in 1867.

Sir William Osler knew him well, but only after Stillé had passed his seventieth year. Of him Osler wrote "He had none of those irritating features of the old doctor, who, having crawled out of the stream about his fortieth year, sits on the bank, croaking of misfortunes to come, and, with less truth than tongue, lamenting the days that have gone and the men of the past." In his valedictory address Stillé said "Only two things are essential; to live uprightly and to be wisely industrious."

The representative session was largely concerned with whether or not to admit delegates from dentistry and pharmacy into the convention, with an attempt by the Congress to repeal the law that it had passed conferring military rank on military physicians, and with continuing emphasis on the improvement of medical education.

A variety of special committees were suggested to investigate special diseases as well as epidemics. Another committee was established to receive volunteer communications and to offer a prize for the most meritorious. This year the versatile Dr. Davis read a paper on an experimental inquiry concerning the processes of assimilation and nutrition.

For those interested in budgets, the annual expenditures of the Association amounted to $1,100. Since there was a slight surplus in the treasury, some of it was made available for publishing. The prizes for the most meritorious essays came from fifty dollar gifts made by Dr. Alfred Stillé and Dr. F. G. Smith.

1852

RICHMOND, VA.

Richmond got the meeting for 1852, and in due course a Virginia physician, Dr. Beverley R. Wellford, became President. The society adopted a resolution admitting a delegate from the American Medical Society of Paris.

Dr. Austin Flint of Buffalo won the prize for the most meritorious essay out of sixteen voluntary communications. The subject of his essay was "On Variations of Pitch in Percussion and Respiratory Sounds, and Their Application to Physical Diagnosis." The essay received, incidentally, the unanimous vote of the committee.

This year the scandal in transportation of steerage passengers from Europe to the United States attracted the attention of the Association. The following resolution was introduced:

> The accumulation of passengers who are emigrants, crowded in ships coming to our shores from foreign ports, having in a great many instances numerous cases of aggravated fever, many of which prove fatal, and likewise producing similar results at the lazarettos, and even cities; the number, likewise, of sick arriving from California, and some of the South American ports, and the fact that none of these vessels are required by law to have physicians or surgeons on board, seem deserving of our attention as conservators of health, and as an act of humanity and duty on the part of the American Medical Association, to bring these facts respectfully to the consideration of Congress, and to request its legislation thereon; Be it therefore
>
> *Resolved,* That the American Medical Association do memorialize Congress to require all vessels carrying steerage passengers on the sea to have a surgeon on board.
>
> *Resolved,* Further, that a committee of this Association be appointed to draw up a memorial to Congress, making such suggestions as it may deem fit as regards the importance of this measure.

Now there arose also some complaint of doctors not connected with the faculties of the medical schools against the monopolization of practice by the teachers. A resolution was offered suggesting that "it be considered unethical to operate upon the legitimate patient of any other physician, knowing that to be such and that the possible perversion of clinics to the private emolument of those conducting them should be scrupulously guarded against."

A committee was set up to declare the contents of a medicine chest for a merchant ship and the directions that ought to go along with it.

There were new attacks on the quality of medical education and defenses by those who were for the status quo. There were amendments to the constitution and by-laws, with an interesting suggestion that the University of Virginia should be entitled to representation in the Association, notwithstanding the fact that it did not have six professors and that it did not require three years of study.

Some twenty-seven essays had been offered to the committees that were to award the prizes. There came a resolution that one prize of $250 be awarded instead of five prizes of $50 each, but another amendment that there be two prizes of $100 each prevailed.

A good many papers were read by title and offered to the publication committee.

Incidentally the resolution giving special courtesy to the University of Virginia prevailed "but only so long as the present peculiar system of instruction and examination practiced by that institution shall continue in force."

This year the income of the Association doubled but so did its expenditures, so that there was left in the treasury the sum of $56.75.

What had been going on elsewhere in the world that should perhaps have attracted more attention at the assemblages of the American Medical Association than seems to have been given?

In France, Claude Bernard was making fundamental discoveries year after year. In 1848 he had discovered the glycogenic function of the liver. In 1849 he had produced diabetes by puncture of the fourth ventricle, and in 1851 he had explained vasomotor functions of the sympathetic nerves.

In 1844 Addison had described pernicious anemia and adrenal disease. Helmholtz had measured the velocity of the nerve current, and several surgeons had operated to relieve abscess of the brain. The hypodermic syringe was invented in 1852 by Pravaz, and little was it realized how frequent would be its use at the end of one hundred years. In 1853 the Crimean war apparently stirred little interest in the meetings of the American Medical Association, but that was the war in which Florence Nightingale founded the profession of nursing. Today questions of nursing are at the very forefront of all considerations in the field of medical care.

The year 1855 saw the introduction of the laryngoscope by Manual Garcia. The Bunsen burner was invented. J. Marion Sims founded a hospital for women's diseases in New York City. Perkins developed the aniline dyes as coal tar products in 1856; from this first step came such remedies as the salicylates, aspirin and eventually arsphenamine and the sulfonamides. Then in 1857 Graefe introduced his operation for strabismus; Bouchut performed intubation of the larynx.

The operation described by J. Marion Sims in 1852 was the result of a number of discoveries beginning in 1845 which involved the development of the peculiar lateral posture known as the Sims position, the invention of the special curved speculum, the use of silver wire for sutures and of the catheter for emptying the bladder while operating on the uterus. The monumental paper of Sims was published in 1852 in the *American Journal of the Medical Sciences* in Philadelphia. It created a profound impression throughout the world. In 1853 he moved to New York, where he founded the hospital for women, which soon became the center of the best gynecologic work of its time. Such procedures were already beginning to add fame to the progress of medicine in America.

Perhaps the most significant book in these first ten years following the founding of the American Medical Association was Daniel Drake's work on "Diseases of the Interior Valley of North America." As pointed out by Fielding Garrison, this was the result of thirty years of labor based largely on personal observation. The first volume is an encyclopedia of the geography, topography, climate, plants and animals and population of the Mississippi Valley; the second volume, an account of malaria and other fevers and of the various epidemics in their relation to the geography, meteorology and topography of the area concerned. This was the first work of its kind since the treatise of Hippocrates on "Airs, Waters and Places" but went even beyond Hippocrates on its relation of epidemiology to geography. When Alfred Stillé reported on it at the meeting of the American Medical Association in 1850, Drake was greeted with prolonged and thunderous demonstrations of applause and enthusiasm such as had been seldom accorded to any American physician previously. Dr. John Shaw Billings reports that "he covered his face with his hands and wept like a child." Daniel Drake, as described by S. D. Gross, was a tall, commanding figure, simple and dignified in manner. "He was always well dressed, and around his neck he had a long gold watch-chain, which rested loosely upon his vest." He lectured with a splendid voice and with fiery eloquence.

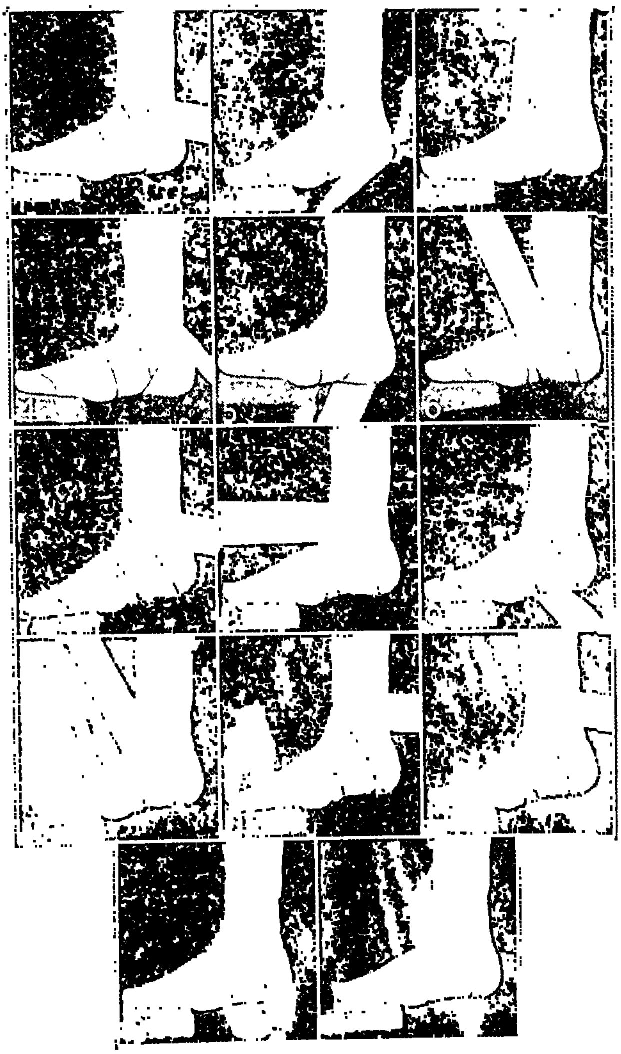
(To be continued)

Clinical Notes, Suggestions and New Instruments

A PROTECTIVE WRAPPING FOR THE ANKLE

T. B. QUIGLEY, M.D.
JAMES COX
and
JOSEPH MURPHY
Boston

The vulnerability of the ankle has long been known to athletes and trainers, and protective bandaging is commonly practiced. The usual wrapping consists of turns taken in a "figure 8" fashion around the malleoli and foot, crossing at the anterior aspect of the astragalus. When critically examined, this bandage really accomplishes little; neither lateral nor anteroposterior motion is greatly limited, and little protection is afforded against sprain or fracture



Steps (1 to 14) in application of protective ankle wrapping.

For the past fifteen years at Harvard College every student who participates in contact sport has been taught a method of wrapping the ankle which considerably limits lateral motion without interfering appreciably with flexion or extension. During this period, not one player wearing this wrapping has suffered a complete rupture of an ankle ligament. When sprains do occur they are minor, and the average period of disability, before return to full athletic participation, has been only eight days.

A considerable number of former college athletes, having learned to apply the wrapping as undergraduates, have used it enthusiastically on weekend skiing expeditions. With the growing popularity of winter sports and the high incidence of injuries to the ankle among amateur skiers and skaters, a description of the method seemed worthy of publication.

Bandages are cut to 100 inch (254 cm.) lengths from 2¼ inch (5.7 cm.) nonelastic ribless muslin tape and thoroughly shrunk by washing in extremely hot water before use. The wrapping is applied over the inner of two pairs of smoothly fitting socks. The toes are placed on the edge of a chair, and the ankle is held firmly at an angle of 90 degrees. The end of the bandage is placed at the lateral malleolus and unrolled snugly, without wrinkles, over the proximal end of the first metatarsal, across the sole, upward, crossed at the center of the ankle joint and back over the medial malleolus (1 in the illustration).

At this point it is angled sharply downward across the lateral aspect of the os calcis, carried across the sole, upward on the medial aspect of the foot and over the lateral malleolus (2, 3 and 4). Again it is angled sharply downward, this time over the medial aspect of the os calcis, carried across the heel and up around the medial malleolus (5, 6 and 7). The remaining turns are of the "figure 8" type around the tarsus and ankle at and just above the malleoli (8 to 14 inclusive). A "figure 8" turn of 1 inch (2.5 cm.) adhesive tape anchors the final turns.

SUMMARY

A protective wrapping for the ankle, for use by college athletes and others, is described. It can be applied by the athlete himself and reduces the incidence and severity of sprains of the ankle by limiting lateral mobility at the ankle joint without interference with flexion and extension.

From *the Department* of Surgery, Harvard Medical School, and the Medical Department, Harvard Athletic Association.

MASSIVE HEMATURIA DUE TO DICUMAROL OVERDOSAGE

DAVID ROSENBLOOM, M.D., and JAY J. CRANE, M.D.
Los Angeles

Dicumarol (3, 3′-methylene-bis-[4-hydroxycoumarin]) is the active principle in spoiled sweet-clover hay which causes hemorrhagic disease in cattle, and it is now made synthetically.[1] Physiologically, it suppresses thrombin formation[2] and impairs clot retraction,[3] and should be administered only if daily determinations of prothrombin time are made.[2] The usual dosage is given as 200 to 300 mg. initially, followed by 100 to 200 mg. a day orally. A twenty-four to forty-eight hour lag (sometimes five days[4]) is followed by an increase in the prothrombin time, and the normal time of 12 to 14 seconds[5] should not be permitted to increase beyond 35 to 60 seconds.[3] Daily prothrombin times should be taken, and preferably the patient should be hospitalized. After withdrawal of the drug, complete recovery takes six to ten days.[4] Overdosage is usually followed by bleeding from various sites of the body. Cohan[6] reported purpura after 2,800 mg. in thirty-two days had been given for postoperative emboli; hematuria persisted eight days after the withdrawal of Dicumarol, and a prolonged bleeding time with definite prothrombin deficiency was present, but platelet reduction or clot retraction abnormality was not observed.

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2. Pfeiffer, D. B., and Sam, F. D: Heparin and Dicumarol: Collective Review, Internat. Abstr. Surg. **78:** 109, 1944; in Surg., Gynec. & Obst., February 1944.
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Which Prolongs Coagulation and Prot
120: 1009 (Nov. 28) 1942.
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5. Todd, J. C., and Sanford, A. H.: Clinical Diagnosis by Laboratory Methods, ed. 10, Philadelphia, W. B. Saunders Company, 1943, p. 201.
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Zucker,[7] in 18 cases in which an initial dose of 300 mg. of the drug was followed by daily doses of 200 mg. observed in 1 patient on the fourth day, a petechial rash of the upper extremity with a concomitant microscopic hematuria of 30 erythrocytes; 4 other patients had microscopic hematuria. Pfeiffer and Sain[2] have observed microscopic hematuria. Lucia and Aggeler[4] reported hematuria on the tenth day of Dicumarol administration (for thrombophlebitis) persisting to the seventeenth day, accompanied by epistaxis, ecchymoses at the sites of hypodermic injections and at herpetic lesions on the lip. Inquiries of several urologists in this city have elicited at least 2 instances of gross hematuria, both of which were definitely attributable to the ingestion of Dicumarol for thrombophlebitis.

Treatment of hematuria caused by Dicumarol consists of discontinuance of the drug, the administration of multiple blood transfusions,[8] and the administration of vitamin K_1 oxide[9] in large amounts (500 or more milligrams). Ordinary synthetic vitamin K is considered to be of little value,[10] although Smith and Kaufman[11] have employed it.

REPORT OF CASE

S. D., a man aged 32, was seen in consultation on Sept. 7, 1945. He stated that when he arose on the morning of Sept. 2, 1945 he had found fresh blood, which had apparently come from his gums, on the pillow; later in the day he had observed gross massive hematuria, so that the urine looked like "pure blood." His physician had made a diagnosis of "nephritis" and had put him to bed on a milk diet. Because of diffuse abdominal pain, an additional diagnosis of "ulcer" was made. One day before the onset of the hematuria, varicose veins in each leg had been injected with sodium morrhuate.

When we saw the patient, the urine was deeply bloody. Careful physical examination failed to demonstrate any abnormalities other than diffuse abdominal guarding and tenderness, and pronounced tenderness of the lumbar and renal area. Masses were not palpable, and normal peristaltic sounds were heard. Slight bleeding of the gingival margin also was present. He was hospitalized on Sept. 8, 1945, and hematologic studies demonstrated a bleeding time of 14 minutes, clotting time of 7½ minutes and a prothrombin time of 112 seconds. Examination of the blood revealed that erythrocytic, leukocytic, thrombocytic, and differential counts were within normal limits. An abdominal roentgenogram did not show calculi or other abnormalities of the urinary tract. The nonprotein nitrogen was 26 mg. per hundred cubic centimeters. At this time the patient was thoroughly requestioned and the history was elicited that in the seven days preceding Sept. 1, 1945, the day of the varicose vein injections, he had taken 46 capsules; the dispensing pharmacist was consulted and stated that the capsules each contained 50 mg. of Dicumarol. Therefore, 2,300 mg. of Dicumarol had been ingested within seven days.

The patient was immediately placed on a regimen of 40 mg. of synthetic vitamin K every two hours for six doses, followed by similar doses every six hours, and vitamin C, 250 mg., every six hours. Vitamin K_1 oxide was not obtainable. Strict rest in bed was enforced. However, the gross hematuria and abdominal pain did not diminish. A transfusion of 500 cc. of citrated blood was administered on September 10, and the procedure was repeated on September 11; on September 12 the hematuria began to lessen. On this day, the patient suffered six severe bilateral renal colics, requiring multiple injections of morphine for relief. These were interpreted as the passage of blood clots down each ureter. On September 13 the temperature suddenly rose to 102 F., and the fever was attributed to a transfusion reaction, postcolic mild pyelonephritis or ureteral trauma. He was given penicillin, 20,000 units every three hours, and sulfadiazine and sodium bicarbonate, 1 Gm. of each, four times a day. The fever promptly subsided, and by September 14 the urine was grossly clear. The patient was dismissed on September 15, afebrile and with clear urine. He was seen on September 16; he felt "washed out" but otherwise normal, and a voided specimen contained only an occasional erythrocyte when viewed microscopically. On September 22, a complete hematologic study was within normal limits. The prothrombin time was 14 seconds. An excretory urogram showed a normal urinary tract.

SUMMARY

A 32 year old man received 2,300 mg. of Dicumarol in seven days (approximately three and a half times the normal dose). Two days later, massive hematuria appeared. Synthetic vitamin K therapy was ineffective. Cessation of bleeding followed the transfusion of 1,000 cc. of blood.

COMMENT

In the differential diagnosis of hematuria, Dicumarol (3, 3'-methylene-bis-[4-hydroxycoumarin]) administration should be considered. *The patient should be questioned about recently* ingested drugs.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following report. Howard A. Carter, *Secretary.*

OTARION MODEL A-4 JR. HEARING AID (SINGLE PACK) ACCEPTABLE

Manufacturer: Otarion Hearing Aid Company, 448 North Wells Street, Chicago.

This single pack hearing aid is a three tube instrument with transmitter and batteries in a pigskin leather case. A four position tone control lever is at the top of the case, and the combined on-off switch and volume control are on the side of the case. A magnetic type receiver is supplied with this instrument. The Otarion Model A-4 Jr. Hearing Aid is convertible, since it may be worn as a single pack (with transmitter and batteries in a single case) or with a separate battery case or pack in the conventional manner.

Dimensions: The case measures 1 by $2\frac{9}{16}$ by 5¾ inches (2.54 by 6.60 by 14.6 cm.).

Weight: The case (containing batteries and transmitter), receiver and cord weigh 9 ounces (255 Gm.).

Current consumption: A battery (1½ volts), 65.0 milliamperes, B battery (30 volts), 0.6 milliampere.

Maximum Acoustical Gain

Frequency	250	500	1000	2000	3000	4000	5000 cycles/second
Tone control							
White	27.5	33.5	39.0	42.5	34.5	26.5	14.0 decibels
Black	26.5	33.5	42.5	50.0	45.0	38.5	26.0 decibels
Green	21.0	28.5	39.0	47.5	43.5	37.0	25.0 decibels
Red	14.0	23.5	34.0	43.5	40.0	34.0	23.0 decibels

With the tone control at the white dot position the high frequencies are attenuated. In the black position the instrument reproduced with maximum width of frequency range. In the green position the low frequencies are moderately attenuated, and in the red position the high frequencies are attenuated maximally.

Performance: The instrument operates in an entirely satisfactory manner. There is a minimum of inherent noise. The pigskin leather case produces a slight amount of frictional noise, which is not perceptible when the transmitter is worn as a separate unit with a separate battery case.

The Council on Physical Medicine voted to include the Otarion Model A-4 Jr. Hearing Aid (Single Pack) in its list of accepted devices.

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[7] Zucker, H. D.: Clinical Experiences with Dicoumarol, J. A. M. A. **124:** 217 (Jan. 22) 1944.

[8] Pfeiffer and Sain.[2] Lucia and Aggeler.[4]

[9] Davidson, C. S., and MacDonald, H.: True Vitamin K Oxide in Treatment of Dicoumarol Overdosage, New England J. Med. **229:** 353 (Aug. 26) 1943. Shapiro, S.; Redish, M. H., and Campbell, H. A.: Effect of Vitamin K upon Hypoprothrombinemia Induced by Dicoumarol in Man, Proc. Soc. Exper. Biol. & Med. **52:** 12 (Jan.) 1943. Lucia and Aggeler.[4]

[10] Allen, Barker and Waugh.[3] Lucia and Aggeler.[4]

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SATURDAY, DECEMBER 14, 1946

STREPTOMYCIN IN INFLUENZAL MENINGITIS

The mortality rate in Hemophilus influenzae meningitis was until recently above 92 per cent. Following the introduction by Alexander[1] of rabbit serum containing antibody against type B organisms, which she employed in combination with sulfadiazine, a reduction in the mortality rate to 26 per cent in a group of patients ranging in age from 3 months to over 5 years was reported.[2] In experiments on mice, Alexander and Leidy[3] demonstrated that streptomycin alone was more effective against massive H. influenzae infections in mice than serum used in conjunction with sulfadiazine. The results of treating 25 patients[4] who had H. influenzae meningitis of type B with streptomycin alone or in conjunction with serum and with serum and sulfadiazine suggest that streptomycin alone will bring about complete recovery when the infection is of mild or average severity. In 9 of the 12 patients who recovered on streptomycin therapy the spinal fluid cultures proved sterile twenty-four hours after initiation of streptomycin therapy, in the other 3 after forty-eight hours. The return to normal of the chemical constituents of the spinal fluid was equally rapid. Now Alexander recommends administering all three agents initially: streptomycin, type specific antiserum and sulfadiazine.

Logan and Herrell[5] employed streptomycin, sulfonamides and antiserum in the treatment of 4 infants suffering from H. influenzae meningitis. In 2 of these clinical and laboratory evidence of improvement did not occur until streptomycin was used. Three patients recovered. In the fourth, H. influenzae was eliminated from the cerebrospinal fluid after treatment with streptomycin, but the patient died several weeks later as a result of hydrocephalus. Weinstein[6] reported recovery in 8 out of 10 cases of purulent meningitis caused by H. influenzae of type B in 8 and by an untypable strain in 2. Streptomycin was given intramuscularly in doses ranging from 15,000 to 125,000 units every three hours and intrathecally in amounts varying from 10,000 to 25,000 units every twenty-four hours. Two of the 9 patients with influenzal meningitis treated with streptomycin died. One showed complete absence of response to the antibiotic agent. The other died of an intercurrent Staphylococcus aureus bronchopneumonia which was not affected by penicillin. The blood and spinal fluid were cleared of the causative organism in twenty-four to forty-eight hours in all cases except the 2 due to atypical strains. Relapses or sequelae were not observed in any of the recovered patients in six to ten weeks after the cessation of streptomycin treatment.

Of the 8 patients with H. influenzae meningitis treated by Birmingham and his associates[7] 4 recovered, 3 died and in 1 streptomycin therapy was given up in favor of sulfonamide and serum. Death in 1 case was associated with the appearance of drug fastness. Toxic reactions included erythema, urticaria, increase in meningeal signs, persistence of pleocytosis, local pain on injection and mild shock on initial administration. None of these were serious. Nussbaum and his associates[8] treated 3 children less than 2 years old with streptomycin intramuscularly and intrathecally and sulfadiazine, with recovery without complications or sequelae.

Further lowering of the mortality rate and lessened incidence of complications and sequelae may be accomplished by early diagnosis and initial employment of the three therapeutic measures streptomycin, the antibody rabbit serum and sulfadiazine. In any event the physician is no longer confronted with a hopeless prognosis in this meningeal infection.

MYTH AND MUMPSIMUS IN MEDICINE

"Myth and Mumpsimus," by Forbes,[1] concerns iconoclastic attitudes toward accepted beliefs and dogmas. Although medicine is not an exception, myth and mumpsimus have a way of lingering because of mental inertia and faith in traditional custom. "Mumpsimus" stands for "a traditional custom, obstinately adhered to however unreasonable it may be." It is a corruption of sumpsimus, first person plural indicative perfect of the Latin verb *sumo,* I take. With regard, for example, to the traditional forcing of fluids on patients with or without pyrexia in the hope of "aiding in the elimination of toxins," what is objected to is not the rationale of the procedure of replacing the loss of body fluids in a sweating febrile patient but the conception of the body as some sort of "involved water-closet to be cleansed by flushing with copious drafts of imperial drink." The ritual purgation in acute food poisoning and administration of magnesium sulfate in infective hepatitis "to promote the free flow of bile" are evidently based on misconceptions of the pathogenesis of these disorders.

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[1] Alexander, Hattie E.: Type B Anti-Influenzal Rabbit Serum for Therapeutic Purposes, Proc. Soc. Exper. Biol. & Med. **40**: 313 (Feb.) 1939.

[2] Alexander, Hattie E.; Ellis, Catherine, and Leidy, Grace: Treatment of Type Specific Hemophilus Influenzae Infections in Infancy and Childhood, J. Pediat. **20**: 673 (June) 1942.

[3] Alexander, Hattie E., and Leidy, Grace: Influence of Streptomycin on Type B Hemophilus Influenzae, Science **104**: 101 (Aug. 2) 1946.

[4] Alexander, Hattie E.: Streptomycin in Pediatrics, J. Pediat. **29**: 192 (Aug.) 1946.

[5] Logan, G. B., and Herrell, W. E.: Streptomycin in the Treatment of Influenzal Meningitis of Children, Proc. Staff Meet., Mayo Clin. **21**: 393 (Oct. 16) 1946.

[6] Weinstein, Louis: Treatment of Meningitis Due to Hemophilus Influenzae with Streptomycin, New England J. Med. **235**: 101 (July 25) 1946.

[7] Birmingham, J. R.; Kaye, Robert, and Smith, Margaret H. D.: Streptomycin in the Treatment of Influenzal Meningitis, J. Pediat. **29**: 1 (July) 1946.

[8] Nussbaum, Sydney; Goodman, Solomon; Robinson, Clarence, and Ray, Louis: Influenzal Meningitis, J. Pediat. **29**: 14 (July) 1946.

[1] Forbes, J. R.: Myth and Mumpsimus, Lancet **2**: 293 (Aug. 31) 1946.

Forbes is probably correct in stating that we do not have reason to think that diet is of any real importance in those diseases which are not associated with gastrointestinal dysfunction or with a definite upset of metabolism. He believes that the enforced disappearance, due to rationing and food shortage in England, of dietary regimens in the last few years has not led to any appreciable increase in death or disease. He thinks rather that many patients are the better for it. His peptic ulcer patients did not relapse any more frequently since he ceased to recommend a carefully selected diet for six months or longer, and he now merely advises them to eat within reason whatever food they find does not disagree. His patients seem to be better because they no longer feel obliged to consider their stomach before all else and to debate the digestibility of each dish before them. Physiologists will probably agree that appetite, when not perverted by gluttony or hysterical inhibitions or falsely determined by injudicious medical advice, is a reliable guide to what is and what is not good for a sick person. The forced overeating of patients with normal appetites, as was formerly practiced on consumptive persons, is in his opinion as foolish as undereating. The custom is disappearing, but its place threatens to be filled by the habit of indiscriminate prescription of vitamins. The medical profession in the United States will subscribe to the statement that the mythical healing properties attributed to vitamins by now far exceed their very real ones.

Prolonged immobilization of older patients, contributing as it does to the dangers of venous thrombosis and passive pulmonary congestion, is being discarded in favor of early ambulation. The same tendency to limit prolonged absolute rest is evident in the treatment of coronary thrombosis. The psychic damage to the person caused by the indiscriminate use of either correct or erroneous medical terms is not sufficiently appreciated by the profession. Forbes questions whether it is wise to inform our symptomless hypertensive patients of the state of their blood pressure. A young man with a functional systolic murmur, who gives a history of ten days of "rheumatism" in childhood, whose mother died of some vague "heart trouble" and who shows an inverted T wave in the third lead of his electrocardiogram, is almost certain to be diagnosed some time as having rheumatic heart disease, though he probably is normal and healthy. Such a diagnosis may have a devastating effect on a suggestible youth, leading to a cardiac neurosis which may result in a life of useless semi-invalidism. The author believes that such an error is at least as great as that of failing to detect a carcinoma in a man of 60. The number of outworn beliefs and practices is naturally multiplied in the field of drugs.

An iconoclastic attitude which insists on experimental and clinical demonstration of the validity of any practice is the surest antidote against myth and mumpsimus.

METHEMOGLOBINEMIA AND TISSUE OXYGENATION

Methemoglobin is a derivative of a normal respiratory pigment, produced by the action of various compounds among which are chlorates, nitrites, acetanilid, nitrobenzene, sulfonal and sulfanilamide. Whereas the oxygenation of hemoglobin produces a derivative (oxyhemoglobin) from which oxygen is readily eliminated under the conditions existing in the tissues, methemoglobin is relatively stable in the body and does not release its contained oxygen for purposes of tissue respiration. As the proportion of methemoglobin increases in the circulation, hypoxia develops and cyanosis appears. The increased incidence of methemoglobinemia following the use of sulfonamide drugs and the suggested therapeutic use of methemoglobin in the treatment of cyanide poisoning raise the question as to how far the favorable action of this derivative can be evoked without interfering with tissue oxygenation.

A recent report[1] describes experiments on human subjects. Relatively untrained as well as trained young men worked on a bicycle ergometer. The initial increase in concentration of lactic acid in the blood together with the subsequent removal was used as an objective index of oxygenation of the muscle. Comparison of the data secured in control periods with those obtained after part of the circulating hemoglobin had been changed to methemoglobin (oral administration of p-aminopropiophenone[2]) permitted conclusions regarding the effect of the altered respiratory pigment on tissue oxygenation. When 8 to 17 per cent of the blood pigment had been changed to methemoglobin, little if any effect on the rate of removal of lactic acid after exercise was noted in relatively untrained men. However, when the proportion of the oxidized pigment was increased to 22 per cent, there was definite evidence for the interference with muscle oxygenation after measured light exercise. Training for the mechanical work seemed to minimize the deleterious influence of methemoglobin on the oxygenation of muscle. However, when the severity of the work was increased the trained subjects, gave indication of impaired oxidative removal of lactic acid from the blood.

The evidence cited points to definite limits of concentration of methemoglobin in the circulating blood beyond which there is interference with tissue oxygenation. Analytical methods for the quantitative estimation of this pigment are available, and information based on their use should be a reliable guide to management of patients in situations which promise to be somewhat more common.

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[2] Vandenbelt, J. M.; Pfeiffer, Carl; Kaiser, Margaret, and Sibert, Margaret: J. Pharmacol. & Exper. Therap. **80**: 31 (Jan.) 1944.

Current Comment

POSTGRADUATE COURSES FOR PHYSICIANS

Semiannually the Council on Medical Education and Hospitals of the American Medical Association publishes lists of postgraduate courses offered to physicians throughout the country for the ensuing six months. In this issue of The Journal the course listings cover the period from Jan. 1, 1947 to July 15, 1947. With the increasing demand for such work from physician veterans there has been a continued increase in the number and variety of offerings. In the current listing there are approximately eight hundred courses offered by about ninety institutions and organizations, which is by far the largest number yet published for any six month period. The medical schools take a prominent part in presenting these courses. Forty-three schools will participate in the presentation of over five hundred courses. In addition a number of the courses, while not given by a medical school, will employ the facilities of medical schools. The wide usefulness of these listings is evidenced by the tremendous demand for reprints. Institutions and individuals participating in these programs are rendering a great service to the profession and to the physician veterans. The Journal and the Council are indebted to them for making publication of the lists possible.

RECENT ADVANCES IN HUMAN GENETICS

Penrose[1] recently analyzed the familial data in 144 cases of anencephaly, spina bifida and congenital hydrocephaly. The data comprised 137 sibships, which were selected on the basis of at least one child affected with the three congenital conditions mentioned. In seven of these sibships a second case of one or other of the conditions occurred. Statistical calculations were made which showed that advancing maternal age bore a significant relationship to the incidence of this group of malformations. When maternal age was eliminated as a factor by statistical means, primogeniture was shown to have some probable etiologic significance. The first of these tentative conclusions conforms with opinions expressed by Murphy[2] and others in this country. In the same issue of the *Annals of Eugenics* Harris[3] has presented what amounts to a scientific study of the commonly made statement that some families run principally to boys or principally to girls. His report is based on a family of watchmakers in England whose family tree could be accurately traced since 1690. During this period thirty-five children were born into the family, of which only two were girls. Harris said that there is small probability of such a sex ratio occurring by chance and that therefore the hypothesis that some hereditary tendency is at work would appear reasonable. An examination of the seminal fluid was made on one representative of this family. In number, percentage, motility and percentage of abnormal forms the spermatozoa were within the usual normal limits. Definite microspermatozoa, that is, smallness in size of the sperm heads, was found. Consequently Harris suggests that there may be a genetic interconnection between individual relative sexual inactivity (as in the case of the man in question), spermatozoa of unusually small head lengths and a family showing a tendency to infertility and the propagation of predominantly male progeny.

THROMBOSIS AND EMBOLISM IN SWEDEN

Zilliacus[1] has recently summarized the results of treatment in 1,158 cases of deep venous thrombosis and pulmonary embolism in twenty Swedish clinics from 1940 to 1945. Comparisons were made of conservative treatment, heparin therapy and Dicumarol (3-3′-methylene-bis-[4-hydroxycoumarin]) therapy. Deep venous thrombosis or sudden pulmonary embolism occurred in 646 (0.51 per cent) of 125,524 surgical patients, 387 (0.40 per cent) of 96,672 obstetric and gynecologic patients and 125 (0.37 per cent) of 34,086 medical patients. Pulmonary embolism developed in 44 per cent of the surgical and 22 per cent of the obstetric patients with deep venous thrombosis. Calculated on the total number of patients admitted, the incidence of pulmonary embolism was 0.23 per cent, with mortality rates of 0.105 per cent in surgical cases, 0.011 per cent for obstetric and gynecologic cases and 0.053 per cent for medical cases. Of 214 cases of deep venous thrombosis of the leg treated conservatively, the thrombosis spread to the thigh in 4 out of 5. In contrast, it was confined to the lower part of the leg in approximately half of 576 patients given specific anticoagulant therapy. Of patients who received the best attention as to early diagnosis and treatment, the thrombosing process was confined to the calf in 4 out of 5. In 30 per cent of the conservatively treated group the thrombosis spread to the other leg, whereas this occurred in only 1.4 per cent of those in whom specific therapy was applied. A striking absence of late sequelae was noted in those patients in whom the acute thrombotic process was restricted to the lower part of the leg. Of 282 cases of sudden pulmonary embolism death occurred in 114 within such a short time that opportunity was not afforded for specific treatment. However, in contrast to 21 deaths among 65 patients treated conservatively, there was no mortality in a group of 103 patients who received anticoagulants (71 with heparin, 16 with heparin and Dicumarol and 16 with Dicumarol alone).

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[1] Penrose, L. S.: Familial Data on 144 Cases of Anencephaly, Spina Bifida and Congenital Hydrocephaly, Ann. Eugenics **13:** 73 (Aug.) 1946.

[2] Murphy, Douglas P.: Congenital Malformations, Philadelphia, University of Pennsylvania, 1939.

[3] Harris, H.: Microspermia in an Individual Form of Family of Unusually High Sex Ratio and Low Fertility, Ann. Eugenics **13:** 156 (Aug.) 1946.

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[1] Zilliacus, H.: On the Specific Treatment of Thrombosis and Pulmonary Embolism with Anticoagulants, with Particular Reference to the Post-Thrombotic Sequelae, Acta med. Scandinav. **171:** 1, 1946.

ORGANIZATION SECTION

Official Notes

THE ATLANTIC CITY SESSION

Applications for Space in the Scientific Exhibit to Close January 13

The Committee on Scientific Exhibit of the Board of Trustees has authorized four special exhibits for the Atlantic City session: Fractures, Physical Medicine, Heart Disease and Fresh Pathologic Material. Each exhibit will be presented by a special committee assisted by a large group of demonstrators.

In addition to the special exhibits, each section of the Scientific Assembly will present groups of exhibits dealing with the various specialties of medicine. Applications for space in these section exhibits are now being received and will close on January 13. Application blanks may be obtained from the section representatives or from the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago 10.

Washington Letter

(From a Special Correspondent)

Dec. 9, 1946.

Top Scientists Sought for Federal Service

Arthur S. Flemming of the U. S. Civil Service Commission informed the annual meeting of the Association of Science Teachers that the government plans to increase its cooperation with colleges and universities to develop scientists and other professional men for positions in the federal service. He said it was essential that government laboratories be staffed with scientists who were "second to none," and he advocated raising the federal pay ceiling from $10,000 to $15,000 annually to attract and retain persons of the highest caliber.

Socialized Medicine Criticized

John H. Hayes, president of the American Hospital Association, told the Maryland-District of Columbia Hospital Association that socialized medicine was an experiment which would cost more in taxes and salary deductions than present hospital care. He stated that if the present charitable work of physicians, community chest agencies and others were matched by a government subsidy, the amount would "stagger even a Congressman." Socialized medicine, he said, would result in poorer medical care, increased public debt and heavier salary deductions.

New Facilities Aid Research on Common Cold

Dr. R. E. Dyer, director of the National Institute of Health at Bethesda, Md., announced that new facilities will be put to work in a study of the common cold, part of a broad gage research program to see what science can do to prevent and cure this common malady. Colds keep an average of 250,000 people absent from their work daily, according to a U. S. Public Health Service survey. This research is part of the comprehensive attack by the institute on the principal diseases afflicting human beings.

The C. I. O. Will Seek More Health and Welfare Features in Contracts

Following the report by THE JOURNAL that the American Medical Association approved "cooperative health planning by management, labor and medicine, provided scientific and ethical standards are maintained," the C. I. O. announced that it planned to endeavor to incorporate more health and welfare features in union contracts. An extremely favorable stand toward the editorial position of THE JOURNAL was noted in several governmental sources.

International Exchange of Students as Step to World Peace

Professor Robert Andrew Milliken, Nobel prize winner of the California Institute of Technology, declared that the most hopeful prospect for world peace is to stimulate the exchange of teachers and research workers between countries. He was one of several noted speakers attending a convocation and reception at the National Museum commemorating the hundredth anniversary of the Smithsonian Institution. Also present were delegates from the National Academy of Sciences, the American Philosophical Society and various foreign scientific organizations, including the British Royal Society and the Institute de France. Dr. L. P. Eisenhart, executive director of the American Philosphical Society, and Dr. Frank B. Jewett, president of the National Academy, brought greetings to the institution. Dr. Vannevar Bush, president of the Carnegie Institution of Washington, presided as representative of the Smithsonian board of regents.

Millionth Baby Born with Birth Expenses Paid by Government

The Federal Security Agency announced that during the past week the millionth baby was born somewhere in the United States whose birth expenses were paid by the Emergency Maternity and Infant Care program of the Children's Bureau. The program, now in its fourth year, is administered by health departments of the states. Wives and infants under 1 year of men serving in the lowest grades of the Army, Navy, Coast Guard and Marine Corps are eligible for care at government expense without regard to family circumstances or racial status. All costs of doctor, nurses and hospitals are paid by the government. At one time the government was paying for between 40,000 and 45,000 maternity cases a month, but the number is down now to about 15,000 a month.

UNRRA Grants Funds to World Health Organization

The United Nations Relief and Rehabilitation Administration has given to the embryonic World Health Organization interim commission a credit of $1,500,000 to carry out UNRRA's health activities, beginning January 1 in Europe and next April in China. The interim commission, meeting in Geneva November 4 to 13, authorized its executive secretary, Dr. Brock Chisholm, to use up to $500,000 of the UNRRA credit in the first quarter of 1947. By a vote of 36 to 0 the Social, Humanitarian and Cultural Committee of the United Nations asked the assembly to recommend that all members ratify the World Health Organization constitution.

Infantile Paralysis Declines in Nation, Attacking 489 During Week

Infantile paralysis was reported by the U. S. Public Health Service to be declining in the nation during the past week, when it afflicted 489 men, women and children, bringing the total of cases up to 23,427 for this year. There were 13,514 cases all of last year and 19,053 in 1944, the worst poliomyelitis year since 1916. The 1946 toll is expected to reach 25,000.

Producers of Streptomycin Ask Removal of Controls on Distribution

The Civilian Production Administration has been asked by the producers of streptomycin to relax distribution controls in order to make larger supplies available to users.

Coming Medical Meetings

American College of Surgeons, Cleveland, Dec. 16-20. Dr. Dallas B. Phemister, 40 E. Erie St., Chicago 11, Secretary.

Southeastern Allergy Association, Atlanta, Ga., Jan. 18-19. Dr. Katharine B. MacInnis, 1515 Bull St., Columbia 49, S. C., Secretary.

GOVERNMENT SERVICES

ARMY

NEW COURSE IN PREVENTIVE MEDICINE

A new course in elementary preventive medicine has been opened at the Medical Department Professional Service Schools, Army Medical Center, Washington, D. C., in order to provide preventive medicine officers for the immediate needs of the Army. The five weeks course will consist of lectures, field work and laboratory investigations. The present class comprises 51 students, 34 of whom are newly appointed medical officers. Sixteen Air Corps doctors are in the group. There is one representative from the Ecuadorian army, Capt. Efrain Z. Guerrero.

While much of the instruction will be carried out by the staff of the Army Medical Center and Walter Reed General Hospital, distinguished civilian doctors will lecture as part of the plan in appointing specialists as consultants to the Secretary of War. Among them will be Kenneth Maxcy, Johns Hopkins University; John H. Dingle, Western Reserve University Medical School, Cleveland; Thomas Francis, University of Michigan School of Public Health; Henry M. Thomas, Johns Hopkins University; Martin Frobisher, Johns Hopkins University; Esmond Long, Phipps Institute, Philadelphia; Joseph Stokes, University of Pennsylvania; George Larrimore, National Cancer Research Foundation, New York; John B. Youmans, Vanderbilt School of Medicine; Albert B. Sabin, University of Cincinnati, and Clarence S. Livingood, University of Pennsylvania.

ARMY EPIDEMIOLOGICAL BOARD RECEIVES AWARD

The Army Epidemiological Board was one of five groups in the fields of medical research and public health administration to receive the Lasker Group Award during the annual meeting of the American Public Health Association in Cleveland in November. Dr. Francis G. Blake, dean, Yale University School of Medicine, New Haven, Conn., chairman of the board during the time for which it was cited, accepted the award on behalf of the board. The Army Epidemiological Board was cited for its work in the control of infectious diseases, one aspect of which was its development of an effective vaccine against influenza. In addition to the services of some 125 authorities on infectious diseases, the board enlisted the facilities of some universities and scientific institutes and conducted extensive surveys and experiments in all theaters where American troops were in operation.

Other groups awarded were the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture; the National Institute of Health, U. S. Public Health Service; the Northern Regional Research Laboratory, Department of Agriculture, and the Board for the Coordination of Malarial Studies. The latter board was composed of representatives of the Army, Navy, Public Health Service, National Research Council, Committee on Medical Research and other civilian organizations engaged in malaria research.

IODINE INSTEAD OF CHLORINE FOR WATER PURIFICATION

A new tablet for purifying water in the soldier's canteen which is considered superior to the chlorine type tablets used during the war, has been announced by the War Department. The new tablet makes the drinking water less objectionable in taste and odor, can be used under a wider range of conditions, and dissolves more quickly than its predecessor. Scientists of the Army Medical Department, Quartermaster Corps and Corps of Engineers, after examining a large number of different compounds, found that triglycine hydroperiodide possessed the best military characteristics. Quickly dissolving tablets containing this chemical, which liberated 7½ parts per million of elemental iodine, were subjected to extensive testing and were found to be safe and highly effective.

Additional tests of the new "tablet, water purification, individual, iodine," as the compound has been designated, will be carried out during the ensuing year.

ARMY AWARDS AND COMMENDATIONS

Colonel John E. Elmendorf Jr.

The Legion of Merit was recently awarded to Col. John E. Elmendorf Jr., M. C., A. U. S., New York, for exceptionally meritorious conduct in the performance of outstanding services as director of the Army School of Malariology from Jan. 14, 1944 to June 3, 1945 and as commandant of the Army School of Malariology from June 4, 1945 to Jan. 25, 1946. The citation states that "his energetic application of foresight, inventiveness, organizing ability and leadership was of inestimable value to the organization's smooth function and constant improvement of the school. Through his intimate and profound knowledge of Central America and his courteous and dignified professional manner, Colonel Elmendorf has been able to obtain the active cöoperation of Alcalded, Corregidores, public health nurses and school teachers in the interior towns of the republic of Panama to carry on malaria surveys and to secure teaching material for the classes attending the Army School of Malariology and to maintain the most cordial relations with the residents of the towns in which the tests were carried out. Colonel Elmendorf's sound judgment, initiative and cheerful attitude under most trying conditions reflect the highest credit to himself and the military service." Dr. Elmendorf graduated from the Johns Hopkins University School of Medicine, Baltimore, and entered the service Dec. 18, 1943.

NUTRITION LABORATORY

Dr. Robert E. Johnson became technical director of the Army Medical Nutrition Laboratory at Chicago on October 1, succeeding Dr. George H. Berryman. Dr. Johnson, who holds a Ph.D. from Oxford and an M.D. from Harvard, has been associated with the Harvard University Fatigue Laboratory since 1935 and has done much research in the field of physiology and nutrition. Dr. Berryman, who holds a Ph.D. from the University of Minnesota, was commanding officer and director of the nutrition laboratory from its activation in 1941 until he left, October 1, to attend the University of Illinois Medical School.

DIRECTOR OF LIBRARY SERVICE APPOINTED

Mr. Francis R. St. John, who during the war was acting librarian at the Army Medical Library and later was chief of the circulation department, New York Public Library, has been appointed director of library service for the Veterans Administration effective Jan. 1, 1947. Mr. St. John will direct the work of more than 150 libraries scattered throughout the United States.

LIBRARIAN RESIGNS

Mr. Wyliss E. Wright has resigned as librarian of the Army Medical Library to become librarian of Williams College, Williamstown, Mass., effective Jan. 1, 1947. Mr. Wright came to the Army Medical Library in 1945 from the New York Public Library, where he was chief cataloguer. From 1930 to 1933 he was librarian at the American Academy in Rome.

CHARGE FOR PHOTODUPLICATION SERVICE

The Army Medical Library, which during the war conducted a free photoduplication and microfilm service on a global basis in the interest of medical research, will make a nominal charge for this service starting Jan. 1, 1947. The volume of this work had increased so much that a revision of policy was recommended by a committee studying the matter under the auspices of the honorary consultants at the request of the Surgeon General. This move will also place the library in line with other federal agencies which charge for similar services. The following price scale has been set up:

Microfilm.—Periodical Articles: A flat charge of 50 cents for any article in a single volume. Books and Serial Publications: Fifty cents for each fifty pages or fraction thereof.

Photoprints.—Fifty cents for each ten pages or fraction thereof from any single volume.

Method of Payment.—All charges are on the basis of cash with order. Only federal agencies are exempted from this requirement. Payment may be made by cash or by check or money order drawn to the Treasurer of the United States.

Order blanks are available on request.

PERSONAL

Brig. Gen. Raymond W. Bliss, Deputy Surgeon General, is making a six weeks tour of army medical installations in Europe. Last year General Bliss inspected all army medical installations in the Pacific Theater, and last spring he returned to Bikini for the atomic bomb test.

PUBLIC HEALTH SERVICE

STANDARDS OF HOSPITAL CONSTRUCTION

The Hospital Survey and Construction Act, authorizing a nationwide program of hospital construction, requires that standards of construction and equipment be established by the Surgeon General, U. S. Public Health Service. These standards will apply to all projects to be built with federal assistance under this legislation.

Such standards have recently been drafted by the Office of Technical Services, Division of Hospital Facilities, U. S. Public Health Service, of which Marshall Shaffer is chief. The Committee on Hospitalization and Public Health of the American Institute of Architects approved the standards and submitted them to a special technical committee on architectural standards appointed by the Federal Hospital Council.

This committee, which met in Washington November 12 and 13, includes in its membership James R. Edmunds, president, American Institute of Architects, chairman; Dr. Claude Munger, director, St. Luke's Hospital, New York; Dr. Frank F. Tallman, Committee of Mental Hygiene, Department of Public Welfare, Ohio; Dr. Warren P. Morrill, Director of Research, American Hospital Association; Dr. Ralph Horton, director, Homer Folks Tuberculosis Hospital, Oneonta, N. Y.; William A. Riley, architect, Boston, and A. N. Langius, director, Building and Construction Division, State Administrative Board, Michigan.

After review and approval by this committee, the standards were accepted by the Federal Hospital Council. These standards will be incorporated in the rules and regulations of the Hospital Facilities Division. The Surgeon General and the federal security administrator will have to approve the rules and regulations before they are published and made available to all persons interested in this program. It is hoped that they will be ready before December 31.

The standards established constitute the minimum requirements considered necessary to insure properly planned and well constructed hospitals and health centers. But since they are minimum requirements, it is pointed out that they should form a basis only for the development of higher standards.

There has been no attempt, in establishing these standards, to make them coincide with all the various state and local codes and regulations. However, strict compliance with all applicable state and local regulations is required. Likewise, compliance is required with minimum standards of construction and equipment promulgated by the state agency administering this program, where such standards are higher than those established by the Surgeon General.

In general, these standards fall into five classifications: site, architectural, structural, mechanical and drawing and specifications. The architectural standards cover the following types of projects: general, tuberculosis, mental psychiatric and chronic disease hospitals; nurses' homes; schools of nursing; public health centers, and state public health laboratories. The mechanical standards cover heating, steam piping and ventilation; plumbing and drainage; electrical; elevators and dumbwaiters; refrigeration; kitchen equipment, and laundry.

DEDICATION OF MEMORIAL LABORATORY

The recent dedication of the new Memorial Laboratory for the study of infectious diseases was attended by medical and civilian dignitaries of the United States, Russia and China. The laboratory, the eighth building of the National Institute of Health at Bethesda, Md., is this country's expression of gratitude for the sacrifices of the twenty-three members of the United States Public Health Service who have died in line of duty. The first of these martyrs was Dr. Roswell Waldo, who succumbed to yellow fever in 1878. Three names were inscribed on this roll of honor as recently as 1944: those of Dr. Richard G. Henderson, fatally infected with scrub typhus, bacteriologist Rose H. Parrott, who died of tularemia, and scientific aide Philip LeRoy Jones, fatally infected with scrub typhus.

The three story brick building, built at a cost of $1,500,000, will be the scene of intensive research on various virus and rickettsial diseases. The building has been planned and constructed to provide maximum safety for the scientists who will carry on this dangerous work. Dr. Charles Armstrong, chief of the Division of Infectious Diseases, National Institute of Health, will administer the new laboratory.

At the ceremony the director of the National Institute of Health, Dr. Rolla E. Dyer, welcomed the more than three hundred guests and introduced the speakers, including Dr. Thomas Parran, Surgeon General, United States Public Health Service; Dr. James Crabtree, Deputy Surgeon General; Dr. Detlev Bronk, chairman, National Research Council; Dr. Vassily V. Parin, secretary general, Academy of Medical Science of the U. S. S. R., and Dr. Szeming Sze, representative, National Health Administration of China.

OFFICERS COMMENDED BY NAVY

Comdr. E. G. Williams and Lieut. Comdr. Howard L. Andrews, both of the U. S. Public Health Service, have been commended by Vice Admiral W. H. P. Blandy, commander, Joint Task Force One, for work in connection with "Operation Crossroads." Commander Williams' assignment called for procurement of radiation detection instruments and radiation sources, which project Admiral Blandy characterized as most difficult. Commander Williams was also praised for establishing the "technical exercise," or instrumentation phase, of the training course. Lieutenant Commander Andrews assisted Commander Williams and also served as instructor in physics and nuclear physics. The admiral declared that Andrews was outstanding in this assignment. Admiral Blandy wrote that the "fine capabilities, initiative, cooperative attitude, technical knowledge and leadership displayed by these officers make them a real credit to the service."

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ALABAMA

Gift to University Eye Clinic.—The Alabama Sight Conservation Association recently donated $10,000 to the department of ophthalmology of the Medical College of Alabama to provide equipment for the University Eye Clinic. The association was organized April 2, 1944 by the Alabama Lions Clubs, and its funds are derived from club memberships, life memberships, case memberships, contributing memberships and individual memberships; the East-West baseball game played each June in Birmingham sponsored by the Birmingham *News-Age Herald, Esquire* magazine, Alabama Lions and Alabama Sight Conservation Association, Inc.

CALIFORNIA

Personal.—Dr. Frank H. Rodin has resigned as ophthalmologist to the bureau of child hygiene, San Francisco Department of Public Health, a position he held for twenty years. He has been succeeded by Dr. Thomas G. Hall, San Francisco, who graduated at St. Louis University School of Medicine in 1923.——Dr. Norman Reider, Los Angeles, has been appointed chief of the psychiatric clinic at Mount Zion Hospital, San Francisco, to succeed the late Dr. Jacob S. Kasanin, San Francisco.

Cancer Fund Honors Dr. Lynch.—The Frank Worthington Lynch Memorial Fund for Cancer Research was recently established as a perpetual memorial fund to Dr. Lynch, who at the time of his death was professor of surgery and gynecology. The fund will finance special research in the history of cancer started by Dr. Lynch some thirty years ago. Dr. Herbert F. Traut, professor of surgery and gynecology and successor to Dr. Lynch, is in charge of continuing the research under the fund. Other sponsors are Dr. George Ebright, associate clinical professor of medicine emeritus, and Dr. William B. Thompson, Los Angeles.

COLORADO

Dr. Masten Goes to Oregon.—Dr. Alfred R. Masten, Denver, director, division of tuberculosis control, Colorado State Board of Health, Denver, has been appointed to the administrative staff of the Oregon State Board of Health, Portland, newspapers announced October 8.

Dr. Gengenbach Made Professor Emeritus.—Dr. Franklin P. Gengenbach, Denver, has been appointed professor emeritus of pediatrics at the University of Colorado School of Medicine, Denver. He has been a volunteer faculty member with the university medical school since 1911. He had been professor of pediatrics and head of the department from 1930 until his retirement on October 1.

ILLINOIS

Chicago

The Christian Fenger Lecture.—The eleventh Christian Fenger Lecture of the Institute of Medicine and the Chicago Pathological Society will be delivered at the Palmer House on Monday evening, January 13, by Dr. Robert A. Moore, Mallinckrodt professor of pathology and acting dean, Washington University School of Medicine, St. Louis, on "Interpretative Morphology."

Personal.—Dr. Fred L. Adair, emeritus professor of obstetrics and gynecology, University of Chicago, and formerly chief, medical staff, Chicago Lying-in Hospital, has received a grant-in-aid from the U. S. Department of State to enable him to serve as visiting lecturer in obstetrics in Argentina. While in Argentina Dr. Adair will lecture at the universities in Buenos Aires, Cordoba, Santa Fe and La Plata. He has been invited by the Society of Obstetrics and Gynecology of Argentina as a special delegate to the sixth Argentina Congress of Obstetrics and Gynecology.

Special Session on Chronic Illness.—On December 3 the Central Service for the Chronically Ill of the Institute of Medicine of Chicago devoted a special session to a discussion on "What Chicago Is Doing About Chronic Illness." The morning session was devoted to the prevention and control of chronic diseases and the afternoon session to long term care of chronically ill patients. Among the speakers were:

Mr. Leo M. Lyons, director, St. Luke's Hospital, Résumé of the Problems of Chronic Illness.

Dr. Andrew C. Ivy, Chicago, vice president, Chicago Professional Colleges University of Illinois, Chronic Diseases—Research and Medical Education in Relation to Prevention and Control.

Miss Edna S. Newman, director, Cook County School of Nursing, Education of Allied Professional Personnel for the Prevention and Control of the Chronic Diseases and the Care of People Disabled by Them.

Dr. John A. Rogers, executive director, Illinois division, American Cancer Society, Health Education and Community Agencies in Prevention and Control of Particular Diseases.

Dr. Carl Peterson, Chicago, Secretary, Council on Industrial Health, American Medical Association, Rehabilitation of Chronically Ill and Handicapped People.

Mr. Samuel A. Goldsmith, director, Jewish Charities of Chicago, Facilities and Services Needed for Care of Long-Term Patients.

Mr. Frank T. Loomis, executive director, Chicago Community Trust, Financial Aspects of Developing New Facilities.

Mr. Raymond M. Hilliard, public aid director, Illinois Public Aid Commission, Meeting the Costs of Care for Financially Dependent Patients.

Miss Mary E. Westphal, director, Visiting Nurse Association of Chicago, Care of Patients in Their Homes.

Dr. Roger W. De Busk, Evanston, president, Chicago Hospital Council; Rev. A. J. Munsterman, superintendent, Bensenville Home Society, Bensenville, Ill., and Miss Kathleen Cronin, superintendent, White Haven Acres, Glenview, Ill., Development of New Community Facilities for Care of Long-Term Patients.

Miss Edna Nicholson, director, Central Service for the Chronically Ill, The Role of the Central Service for the Chronically Ill.

New Wing for Research and Educational Hospitals.—Construction of a thirteen story wing to the Research and Educational Hospitals, University of Illinois College of Medicine, will begin about March 1. Of the total cost of the addition, $6,300,000, $2,200,000 is available from funds appropriated for the current (1945-1947) biennium. An additional sum of $4,100,000 is included in the university's total budget request for the 1947-1949 biennium for construction on the Chicago Professional College campus. Hospital bed capacity will be increased from 503 to 723 by the addition. At present the university's hospital beds total 227 in the general hospital, 120 in the Illinois Surgical Institute for Children (university orthopedic department) and 156 in the Illinois Neuropsychiatric Institute, which is owned by the department of public welfare but staffed and operated by the university. The thirteen story addition will connect with the present hospital at six levels on the north side and with the one story physical environment addition at one level on the west side. All three will be joined through an extension of the present tunnel system. Department clinical offices, research laboratories, x-ray and other adjunct services and operating rooms will be located on the second through the fifth floors. Floors 6 through 13 will contain hospital beds. Air conditioning will be installed in one of the hospital bed floors designed for 25 patients. The purpose is to provide special research and therapy under controlled temperatures. Operating rooms, delivery rooms and nurseries will also be air conditioned, and all floors will be so constructed that air conditioning may be installed later. The addition will be located on the west side of Wood Street between Polk and Taylor streets between the present hospital and the Illinois Neuropsychiatric Institute.

INDIANA

State Medical Election.—Dr. Cleon A. Nafe, Indianapolis, was chosen president-elect of the Indiana State Medical Association at its recent annual meeting and Dr. Floyd T. Romberger, LaFayette, will take office as president of the association January 1, succeeding Dr. Jesse E. Ferrell, Fortville. Dr. Arthur F. Weyerbacker, Indianapolis, is treasurer for another term. Named as delegates to the American Medical Association were Drs. Homer G. Hamer, Indianapolis, and Alfred S. Giordano, South Bend. French Lick was selected as the site for the 1947 convention.

Grant for Research in Gangrene.—Indiana University School of Medicine has received a grant of $15,000 from the National Institute of Health, U. S. Public Health Service, Bethesda, Md., to study the organisms concerned in the cause of gas gangrene of man and certain animals, according to the Indianapolis *News*, November 8. Leland S. McClung, Ph.D., Bloomington, associate professor of bacteriology, will be in charge of the program, and certain parts of the work will be done in cooperation with Harry G. Day, Sc.D., Bloomington, associate professor of chemistry.

MARYLAND

Lecture Named for Julius Friedenwald.—On November 14 Dr George B Eusterman, Mayo Clinic, Rochester, Minn, gave the first annual Dr Julius Friedenwald Memorial Lecture at the University of Maryland School of Medicine, Baltimore His subject was "Newer Phases of Gastroduodenal Ulcer" The Friedenwald Lecture was established at the University of Maryland School of Medicine in Baltimore in 1941, following the death of Dr Friedenwald, professor emeritus of gastroenterology at the Maryland medical school

Institute for Mental Disorders.—Dr Robert V Seliger, Baltimore, has been named medical director of the newly organized Neuropsychiatric Institute of Baltimore, with headquarters at 2030 Park Avenue, Baltimore 17 The institute is a private outpatient arrangement for the investigation, understanding and treatment of nervous, mental, emotional and personality illnesses In addition to the usual investigative and treatment technics, the institute is equipped with an electroencephalographic laboratory and has trained personnel to administer the various practical clinical psychologic test technics Electric shock therapy is available for carefully selected patients While the institute itself does not provide hospitalization, facilities are available to arrange for the care of patients requiring partial semi or complete protective environment

MICHIGAN

Changes in Health Personnel—Dr William B Wild, Mansfield Ohio, has been named director of the Barry County Health Department, filling the vacancy that occurred when Dr John K Altland, Hastings, resigned to become director of local health services of the Michigan State Department of Health, Lansing

Dr. Cummings Goes to Ireland—Dr George D Cummings, director of laboratories, Michigan State Department of Health Lansing, was to leave November 9 for Dublin to direct an Irish Free State campaign against epidemic diarrhea in newborn infants, newspapers reported Specimens requiring analysis will be flown from Ireland to Michigan, permitting examination in the Lansing laboratories twenty hours after the specimens are collected

NEW YORK

Louise Beamis Resigns—Dr Louise W Beamis has resigned as secretary of the Medical Society of the County of Erie effective January 1, owing to illness of a member of her family Dr Beamis had held the secretaryship since 1929

Buffalo Cancer Center.—Plans to establish a cancer center in Buffalo and the award of nineteen fellowships and grants totaling $135,455 for cancer research were announced November 6 by John Pennington, president of the state division of the American Cancer Society The cancer center is to be used as a directional clinic to aid in early detection and arrest of the disease but will not be used for research or treatment The fellowships and grants went to different hospitals, universities and other groups for work by specified individuals

New York City

The Third Harvey Lecture—Dr Charles B Huggins, professor of surgery (urology), University of Chicago School of Medicine, will deliver the third Harvey Society Lecture in the current series at the New York Academy of Medicine, December 19 His subject will be "The Prostatic Secretion"

Perkin Medal Goes to Robert Williams—Robert R Williams D Sc, director of research of the Research Corporation of New York, has won the 1946 Perkin Medal of the American section of the Society of Chemical Industry, according to the New York *Times*, November 25 The medal will be presented January 10

Public Exhibit on Anesthesia—Commemorating the hundredth anniversary of the discovery of ether, New York University College of Medicine opened to the public November 13 an exhibit on anesthesia in the library of the college at 477 First Avenue Old and rare items connected with the history of anesthesia were on display until November 27

New Professor of Surgery at Columbia—Dr John S Lockwood since 1924 chief of the division of surgery, committee on medical research of the Office of Scientific Research and Development has been appointed professor of surgery at Columbia University College of Physicians and Surgeons Dr Lockwood will also serve as attending physician at the Presbyterian Hospital Dr Lockwood, who graduated at Harvard Medical School, Boston, in 1931, has for the past two years been associate professor of surgery at Yale University School of Medicine New Haven, Conn

SOUTH CAROLINA

Changes in Health Officers—Dr Charles I Goodwin, Holly Hill, was appointed to succeed the late Dr Grover C Bolin as director of the Orangeburg and Calhoun County Health Departments, September 1 Dr Caroline H Callison, Chatham, has been granted a leave of absence as director of the Greenwood and McCormick County Health Departments to take a course in public health at Columbia University During her absence Dr Maulden J Boggs Jr, health officer of Abbeville, will be in charge of the Greenwood and McCormick health units

TEXAS

Postgraduate Assembly.—The postgraduate medical assembly of South Texas was held in Houston, December 3 5 Included among the speakers were

Dr Eugene F Traub New York Dermatology
Dr Henry L Bockus Philadelphia, Gastroenterology
Dr Deryl Hart, Durham, N C, Surgery
Dr Richard W TeLinde Baltimore, Gynecology
Dr Guy A Caldwell New Orleans Orthopedics
Dr Lowrain E McCrea Philadelphia Urology
Dr Paul H Holinger, Chicago, Laryngology
Dr Frederick H Falls Chicago, Obstetrics and Gynecology
Dr James L Wilson Ann Arbor, Mich Pediatrics
Dr Wendell L Hughes Hempstead N Y, Ophthalmology
Dr Fletcher D Woodward Charlottesville, Va, Otolaryngology
Dr Sidney A Portis Chicago Medicine
Dr Edwin Hayden, Boston, Surgery
Dr Thomas D Allen, Chicago, Ophthalmology

University News—Dr George M Decherd Jr, Galveston, has been appointed director of the student health service of the University of Texas at the Austin campus He is relinquishing his positions at the medical branch at Galveston as director of the heart station and as director of the postgraduate training program but is retaining his title as professor of medicine Dr Truman G Blocker Jr, Galveston, professor of surgery, has been appointed director of the postgraduate training program at Galveston——Dr Robert W Davis, formerly associated with the department of psychiatry of the University of Colorado School of Medicine, Denver, has been appointed associate professor of neuropsychiatry at the University of Texas Medical Branch Galveston, and assistant director of the Galveston State Psychopathic Hospital Dr Davis graduated at the University of Michigan Medical School, Ann Arbor, and received special training in psychiatry at the University of Colorado School of Medicine

VIRGINIA

Division Heads Named—Dr J C Neale Jr, Norfolk, assistant director of the bureau of local health services, Virginia State Department of Public Health, has been named director and Dr Peyton M Chichester, Richmond, also an assistant director has been chosen acting director of the bureau of tuberculosis outpatient service and crippled children's service The Richmond *Times-Dispatch* reported on October 26 that both appointments were effective immediately Dr Jack B Porterfield who recently resigned as health officer of Richmond, effective November 15, will return to the state board of health as an assistant director in the bureau of local health services He has been succeeded in the Richmond position by Dr Charles Howe Eller Baltimore

WEST VIRGINIA

Personal—Dr Andrew E Amick of Lewisburg has been named by Dr Newman H Dyer, state health commissioner, as district health officer and pediatric consultant for district number 2, composed of Greenbrier, Pocahontas and Monroe counties Headquarters will be set up at Lewisburg With the announcement of the appointment of Dr Amick the commissioner said that the state health department is now working out details for a branch laboratory which, it is hoped, can be established and operated at Lewisburg under the supervision of Dr Amick Plans are still in the formative stage, but it is expected that the laboratory can be opened shortly after the first of the year There has been a vacancy in the office of district health officer for district number 2 since 1944, when Dr Herbert Duncan resigned to accept a residency in eye, ear, nose and throat at the Nashville General Hospital in Nashville

——Dr. Charles Taylor, Huntington, has been reappointed superintendent of the Huntington State Hospital, a position he has held since 1933——Dr. Harry F. Coffman, Keyser, has been named by the Public Health Council as part time health officer for Mineral County.

WISCONSIN

The Loevenhart Memorial Lecture.—Dr. Walter C. Alvarez, Rochester, Minn, delivered the Dr Arthur S. Loevenhart Memorial Lecture, December 5, at the University of Wisconsin Medical School, Madison, under the auspices of the Phi Delta Epsilon Medical Fraternity Dr Alvarez's subject was "Headache"

GENERAL

Dr. Foote Joins Society for Prevention of Blindness.—Dr Franklin M Foote, recently discharged from service in the Army of the United States, has been appointed medical director of the National Society for the Prevention of Blindness, 1790 Broadway, New York 19 Dr Foote retains his position as assistant professor of public health and preventive medicine at Cornell University Medical College

New Journal on Postgraduate Medicine.—The official publication of the Inter-State Postgraduate Medical Association of North America will be published beginning January 1947, announces Dr Arthur G. Sullivan, managing director of the Interstate Postgraduate Medical Association of North America The business manager, Paul K Whipple, who is located at 515 Essex Building, Minneapolis, is already receiving space commitments for the first issue The subscription price is $8 per year

Vitamin Foundation Approves Grants.—The National Vitamin Foundation at its first dinner meeting at the Waldorf-Astoria Hotel, November 15, announced that it had approved six grants-in-aid, totaling $23,300 The new grants include

Willard A Krehl, Yale University School of Medicine $2 000, alteration of vitamin requirements induced by natural foodstuffs

Barnett Sure, Ph D, professor of agricultural chemistry, University of Arkansas, Fayetteville, $3,000, influence of the various components of the vitamin B complex on protein utilization

Dr James J Smith, assistant in medicine New York University College of Medicine, $1,500, determinations of biochemical base lines for studies of vitamin hormone interrelationships

Dr William J Darby, assistant professor of biochemistry and medicine, and Dr Edgar Jones, associate professor of clinical medicine Vanderbilt University School of Medicine, Nashville, $3,800 the hemopoietic activity and other physiologic properties of the vitamin M group of substances

Dr Tom D Spies, associate professor of medicine, University of Cincinnati College of Medicine, $5,000, relation of nutrients to white blood cell formation

Max K Horwitt Ph D Elgin State Hospital, Elgin, Ill, $8,000, study of riboflavin in human nutrition

New Psychiatric Foundation.—The organization of the Psychiatric Foundation has been announced The group is being developed by the American Psychiatric Association and sponsored by the American Neurological Society Dr Leo H Bartemeier, Detroit, secretary of the American Psychiatric Association, is in charge of the group designated by the association to assume responsibility for the new foundation during the organization period Objectives. education of members of the psychiatric team in the psychiatric field; psychiatric research, medical legislation; child psychiatry, education of the public, and policy as to fund raising In addition to Dr Bartemeier the organization committee includes Drs. Edward A Strecker, Philadelphia, Frederick Parsons, New York; Karl M Bowman, San Francisco; Arthur H. Ruggles, Providence, R I; Winfred Overholser, Washington, D. C, Harry C Solomon, Boston; Gregory Zilboorg, New York City, C. Charles Burlingame, Hartford, Conn; Mesrop A Tarumianz, Farnhurst, Del, and Mr. D. Walker Wear, New York Austin M Davies is executive director, and headquarters are in room 924, 9 Rockefeller Plaza, New York

Directory of Convalescent Homes.—The Committee on Public Health Relations of the New York Academy of Medicine is preparing a new edition of the "Directory of Convalescent Homes in the United States," to be published by the Sturgis Fund of the Winifred Masterson Burke Relief Foundation of White Plains, New York. The last issue of this directory was published by the Sturgis Fund in 1931 under the auspices of the Committee on Convalescent Care of the American Conference on Hospital Service and has long been out of print. Early in January a questionnaire will be distributed to all recognized convalescent homes maintained by municipalities, counties or voluntary bodies The information sought deals with the physical plant, the staff, the requirements for admission, the type of patients, therapy and such other matters as will make the directory a dependable guide for physicians who wish to refer their patients to institutions for convalescence. The questionnaire is so devised that it can be filled out with a minimum of effort. Convalescent homes that do not receive a questionnaire are urged to request one by writing to E H. L Corwin, Executive Secretary, Committee on Public Health Relations, New York Academy of Medicine, 2 East 103d Street, New York 29.

Borden Award in Nutrition.—The American Institute of Nutrition will present the Borden Award in recognition of distinctive research by investigators in the United States and Canada which has emphasized the nutritive significance of the components of milk or of dairy products. The award will be made primarily for the publication of specific papers, but the judges may recommend that it be given for important contributions over an extended period of time. The award may be divided between two or more investigators Employees of the Borden Company are not eligible for this honor The formal presentation will be made at the annual meeting of the institute in Chicago, May 18-22, 1947. To be considered for the award, nominations must be in the hands of the chairman of the nominating committee by Jan. 15, 1947. The nominations should be accompanied by such data relative to the nominee and his research as will facilitate consideration for the award. The chairman is Genevieve Stearns, Ph D, State University of Iowa College of Medicine, Iowa City

Research Council to Study Pollen Distribution.—A research council to study pollen distribution throughout the nation in an effort to help present sufferers from hay fever is being set up by the American Academy of Allergy, the New York *Times* reported November 26. The plan calls for the formation of three major divisions to deal with aero-allergens, foods and drugs and pharmaceuticals The work of the council will be modeled after the Committee on Aerobiology of the National Research Council. Members of the council are to be appointed by the executive committee of the academy in December The first subject to be studied will be air borne substances causing allergies Subcommittees will deal with four major divisions of allergens—pollens, molds, dust and miscellaneous allergens, and air processing Among the projects the subcommittees will prepare will be a daily pollen count map to be made in cooperation with the United States Weather Bureau The map will be offered to newspapers for publication. The academy has allocated $1,000 for initial administrative expenses of the new group Additional financing will be sought from foundations and private contributors.

Francis Amory Prize.—In compliance with the terms of a gift under the will of the late Francis Amory, Beverly, Mass, the American Academy of Arts and Sciences offers a substantial prize for meritorious work addressed to the alleviation or cure of diseases affecting human reproductive organs The gift provides a fund the income of which may be awarded at seven year intervals "as a prize and gold medal, or other token of honor or merit," to any individual or individuals for work of "extraordinary or exceptional merit" in this field In case there has appeared work of a quality to warrant it, the next award will be made in 1947. Awards will be made for what in the judgment of the Committee on the Amory Fund appears to be the most distinctive contribution or contributions in the field as outlined and as based on published work and recognized accomplishment for the current seven year period No formal applications and no essays or treatises from individuals are solicited, but suggestions will be welcome from any appropriate source that will be of aid to the committee in making a wise selection Recommendations may be addressed to Secretary, Amory Fund Committee, American Academy of Arts and Sciences, 28 Newbury Street, Boston

Marriages

John Kellam Lingo, Pungateague, Va., to Miss Hilda Sinclaire Jervis of Marshall, N C, in New York August 14.

John J. Archinard Jr., New Orleans, to Miss Zelma Claudia Weaner of Shreveport, La., April 13.

Robert B. Robertson, Presque Isle, Maine, to Mrs. Ellen Pegues Godfrey in New York recently.

August H. Kramm, Washington, D. C., to Miss Margaret Cotter in Rockville, Md, recently.

Burton Sinclair Wilt to Miss Frances Dowling, both of Wing Point, Wash., September 10.

Frank Cole, Duluth, Minn, to Miss Doris Cohen of Superior, Wis, August 31.

Deaths

Alice Stone Woolley ® Poughkeepsie, N. Y.; born in Yankton, S. D., Sept. 12, 1882; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1930; interned at the Gallinger Municipal Hospital in Washington, D. C., where she was resident physician at the Children's Hospital; past president and chairman of the international relations committee of the American Medical Women's Association; past president and vice president of the Women's Medical Society of New York State; decorated by the French government in recognition of her two years of military service overseas during World War I; appointed by Governor Dewey to the board of visitors of the New York State Training School for Girls, Hudson; served as director of the Dutchess County Health Association, a member of the council of the Dutchess County Girl Scouts and the board of directors of the Dutchess County chapter of the American Red Cross; director of physical education at the local Y. W. C. A. from 1908 to 1925; member of the courtesy staffs of the Northern Dutchess Health Service Center, Rhinebeck, St. Francis and Vassar Brothers hospitals; member of the board and vice president of the Bowne Memorial Hospital; on the board of the Samuel and Nettie Bowne Hospital; medical consultant for Bard College, Annandale-on-Hudson; associate editor of the *Journal of the American Medical Women's Association;* died in the Doctors Hospital, New York, November 16, aged 64, of coronary thrombosis and bronchopneumonia.

Marion Hague Rea ® Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1915; born in Denver July 21, 1885; served an internship at the Philadelphia General Hospital (Blockley Hospital) 1915-1916 and as assistant physician at the Boston Psychopathic Hospital, 1916-1917; returned to Philadelphia to become chief resident physician of the Hospital of the Woman's Medical College of Pennsylvania, in which capacity she served for one year and later assistant and associate in medicine, serving from 1917 to 1923; resident physician at Bryn Mawr (Pa.) College from 1918 to 1920 and in 1923 and 1924; assistant visiting physician to the Philadelphia General Hospital from 1917 to her death; served as instructor in medicine at the University of Pennsylvania School of Medicine since 1918; medical director in the department of physical education for women at the University of Pennsylvania from 1921 to 1935; since 1922 chief in medicine at the Woman's Hospital; died suddenly November 1, aged 61, of myocarditis.

Irving Samuel Haynes ® Plattsburg, N. Y.; born in Saranac, N. Y., Aug. 29, 1861; University of the City of New York Medical Department, New York, 1887; professor of clinical surgery emeritus at Cornell University Medical College, New York; fellow of the American College of Surgeons; served as medical superintendent of the Physicians Hospital, where he has been a member of the board of directors since 1944; consulting surgeon to the Reconstruction and Harlem hospitals in New York and the Glens Falls (N. Y.) Hospital; author of "Practical Guide for Beginners to the Dissection of the Human Body" and "Manual of Anatomy"; received the doctor of science degree from Wesleyan University in 1915; died October 9, aged 85.

William Schaeffer Bertolet ® Reading, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1900; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; first president of the Diplomates' Association of Berks County Physicians; served as chairman of the Berks County Medical Advisory Board during World War I; held honorary degrees of doctor of science from Albright College and Franklin and Marshall College; medical director of the Reading Hospital, where he served for many years in various capacities and where he died October 9, aged 71, of heart disease.

Charles James Roach, Zanesville, Ohio; Ohio State University College of Medicine, Columbus, 1917; member of the American Medical Association; won many decorations for outstanding and meritorious service during World War I; company physician for the American Rolling Mill Company, Firestone Tire and Rubber Company and Zanesville Aerie of Eagles, receiving a congressional certificate of merit for his services in this capacity during World War II; served as chief of the staff of the Good Samaritan Hospital, where he died September 21, aged 56, of leukemia.

Ernest E. Billings, Kingston, N. Y.; University of the City of New York Medical Department, New York, 1884; member of the American Medical Association; on the staffs of the Benedictine and Kingston hospitals; died October 4, aged 87, of chronic myocarditis.

George Houghton Bodley ® New Britain, Conn.; Yale University School of Medicine, New Haven, 1907; served on the staff of the New Britain General Hospital; died July 12, aged 66, of pneumonia.

Herschel Baker Bray, Wrightsville, Ga.; Emory University School of Medicine, Atlanta, 1922; member of the American Medical Association; interned at the Grady Memorial Hospital in Atlanta; served during World War I; died July 2, aged 51.

Hiester Bucher ® Reading, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1897; served on the staff of the Reading Hospital; died August 1, aged 74, of coronary occlusion.

William Roy Cain, Tyler, Texas; University of Texas School of Medicine, Galveston, 1909; member of the American Medical Association; served in France during World War I, for which he received the Purple Heart and was cited for meritorious service by both French and United States commanders; for two and half years ophthalmologist with the U. S. Army induction station at Tyler; for many years city health officer; found dead August 11, aged 59, of coronary occlusion.

Enoch J. Cook, Monahans, Texas (licensed in Texas under the Act of 1907); for two years served with the Selective Service Board; died August 7, aged 69, of cerebral hemorrhage.

Linus Reed Cranmer ® Steubenville, Ohio; University of Michigan Medical School, Ann Arbor, 1915; interned at the Lakeside Hospital in Cleveland; resident physician for the Wheeling Steel Company and the Pennsylvania Railroad; on the staffs of the Ohio Valley and Gill Memorial hospitals; died September 17, aged 56, of coronary thrombosis.

Carl Frederick Dick, St. Louis; University of Nashville (Tenn.) Medical Department, 1901; founder of the Dick-X-Ray Company; died in the Barnes Hospital October 20, aged 68, of coronary disease.

John Henry Donovan, Lowell, Mass.; College of Physicians and Surgeons, Boston, 1905; died September 10, aged 65, of cerebral hemorrhage.

Lee Bennett Gardner, Geneva, N. Y.; Eclectic Medical College, Cincinnati, 1899; member of the American Medical Association; on the staff of the Geneva General Hospital, where he died September 1, aged 73, of ruptured gastric ulcer.

Robert Willis Hatch, Indianapolis; University of Minnesota Medical School, Minneapolis, 1932; diplomate of the National Board of Medical Examiners; died in the City Hospital September 8, aged 40, of portal cirrhosis.

Robert G. Henderson, Falls City, Neb.; Kansas City Medical College, 1900; member of the American Medical Association; affiliated with Our Lady of Perpetual Help Hospital; died September 25, aged 74, of coronary thrombosis.

Henry Francis Kinsman ® Hamlet, N. C.; University of Vermont College of Medicine, Burlington, 1894; died in the Memorial Hospital, Charlotte, August 24, aged 74, of pneumonia.

Charles E. Mays, San Angelo, Texas; Medical Department of Tulane University of Louisiana, New Orleans, 1885; honorary member of the State Medical Association of Texas; past president of the Tom Green County Medical Society; served on the staffs of St. John's Hospital and the Shannon West Texas Memorial Hospital, where he died June 20, aged 84, of pneumonia.

Thomas J. Pennebaker, Cotton Plant, Miss. (licensed in Mississippi in 1891); died September 12, aged 87, of arteriosclerosis.

Henry Ruffu, Atlantic City, N. J.; Chicago Medical School, 1928; died in the Atlantic City Hospital September 23, aged 48.

Franklin Wesley Sells ® Osceola, Iowa; Drake University Medical Department, Des Moines, 1896; died September 27, aged 73, of cerebral hemorrhage.

Anthony Claudius Thiolliere, North Little Rock, Ark.; Université de Lyon Faculté de Médecine et de Pharmacie, France, 1894; Dallas Medical College, 1903; member of the American Medical Association; a captain in the medical corps of the U. S. Army during World War I; died September 2, aged 73, of cerebral hemorrhage and hypertension.

Lawrence Patrick Tully, Iron River, Michigan; Marquette University School of Medicine, Milwaukee, 1923; served during World War I; died in the Veterans Administration Hospital in Milwaukee, July 26, aged 49, of pulmonary tuberculosis.

William Morris Watkins, Louisville, Ky.; Kentucky University Medical Department, Louisville, 1904; served during World War I; died in St. Anthony's Hospital September 16, aged 73, of pneumonia complicating cerebral hemorrhage.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 16, 1946.

The British Medical Association and the National Health Insurance Act

The national health service bill has become law, but the opposition of the British Medical Association has only reached its climax. The association has posted voting forms to all doctors on the medical register asking them to answer Yes or No to the question "Do you desire the negotiating committee to enter into discussions with the minister on the regulations authorized by the National Health Service Act?" They are asked to return the form by November 30 or as soon as possible if in practice oversea. They are asked to state the number of years since qualification and the branch in which they practice. On the plebiscite form they are informed that the time has now come for a crucial decision of the profession. The act authorizes the minister of health now to proceed to regulations dealing with a wide variety of subjects, including the mode of and amount of professional remuneration, the terms and conditions of service generally and the composition of the regional hospital boards. The immediate issue which confronts the profession is whether it will or will not enter into discussions with the minister on the subject matter of these regulations. This issue the association places before the profession as a whole to determine by plebiscite. Those who hold that, notwithstanding the divergence between the principles of the profession and the provisions of the act, discussions should be entered into will answer Yes to the appended question. A decision to enter into discussion does not involve a decision to enter the service. Those who hold that, because of the wide divergence between the principles of the profession and the provisions of the act, the profession should decline to accept service under the scheme, whatever the conditions, will not authorize discussions and will answer No. If a sufficient number give a negative answer, the association will take the necessary action and prepare for the inevitable conflict. Implicit in such a vote is an undertaking, if so advised by the association, not to enter the new service.

The plebiscite form is accompanied by a letter from Dr. Hill, the secretary of the British Medical Association, which summarizes the more important issues on which the Representative Body differed with the government scheme: 1. There should be no control over doctors with regard to the area in which they wish to practice. 2. The transference of hospitals to state ownership was not approved. 3. It is essential to the freedom of the patient and of the profession that doctors should retain the good will of their practices. 4. Remuneration should be by capitation payments. 5. Any doctor, whether a specialist or a general practitioner, must have all the facilities for treating patients that are now held. The plebiscite form is also accompanied by a summary of the act and a report of the negotiating committee of the profession showing the main divergencies of the act from the views expressed by the organized bodies of the profession.

Paludrine in Malaria

At the Royal Society of Tropical Medicine and Hygiene, Professor Hamilton Fairley described remarkable results from the treatment of malaria by the new drug paludrine in the Australian army campaigning in the southwestern Pacific. The medical research unit of the Australian army experimentally infected with malaria 850 healthy volunteers. More than 200 were treated with paludrine, a biguanide derivative, while many hundreds of troops with relapsing benign tertian malaria were treated with the drug under controlled conditions. While taking 100 mg. of paludrine daily for three weeks after being infected with Plasmodium falciparum by infected mosquitoes, volunteers did not develop any symptoms of malaria and parasites were never demonstrated in their blood either microscopically or by subinoculation into fresh volunteers. Thus the drug acted as a causal prophylactic in falciparum infections. After infection with Plasmodium vivax a similar result was obtained. But on ceasing to take the paludrine all those infected subsequently developed delayed attacks of overt vivax malaria. Thus paludrine acted only as a partial prophylactic against benign tertian infections. Volunteers received as many as 130 P. falciparum and 120 P. vivax infections while taking 100 mg. of paludrine daily. During this time they were subjected to severe stresses and strains, including long marches in a tropical climate, chilling by exposure in a freezing chamber and injections of epinephrine and insulin. The daily dose of paludrine was continued for four weeks after the last exposure to infection, which covered a period of two months. Throughout the period of three months no symptoms of malaria were observed and parasites were never demonstrated in the blood. Some twenty-four to thirty-three days after the last dose of paludrine overt vivax malaria developed, but never falciparum malaria.

The practical conclusion from these and other experiments is that paludrine 100 mg. twice weekly will entirely prevent falciparum infection and will suppress vivax malaria throughout the period of administration. The significant quality of paludrine as a schizonticide is the smallness of the dose required to resolve a clinical attack of malaria. A single tablet of 100 mg. will cause disappearance of symptoms and of parasites from the blood, but radical cure is not to be expected from this dose. An entirely new field in the chemotherapeutic control of malaria is opened up by paludrine.

BRAZIL

(From Our Regular Correspondent)

São Paulo, Nov. 22, 1946.

Etiology and Treatment of Arterial Hypertension

Dr. Francisco Xavier de Pinto Lima and Dr. José Engelberg call attention to the factors which assume a role in essential hypertension as well as to the modern conception of that condition such as the phenomena of humoral factors with a predominantly renal origin. There are in the circulation humoral complexes which are formed or stored in different organs of hypertensive and hypotensive patients.

Dr. Lima and Dr. Engelberg present the details of organotherapy in hypertension. To strengthen their point of view they present graphs made in experiments on animals.

Hodgkin's Disease

Based on previous studies and his own observations, Professor Alexandre Donati states that Hodgkin's disease is an infectious reticuloendotheliosis and the infectious agent is the virus discovered by Gordon. The allergic state which develops in the patients is used by Dr. Donati for an intradermal test with diagnostic finality. Dr. Donati points out the advantages of vaccination therapy over roentgen therapy.

Hospitals in Brazil in 1943

In 1943 Brazil had 1,575 hospitals with a capacity of 117,304 beds. The states that have more hospitals are São Paulo with 377, Minas Geraes with 259, Rio Grande do Sul with 250, Distrito Federal with 107, the state of Rio de Janeiro with 92, Paraná with 91, Santa Catarina with 72, Baía with 66 and Pernambuco with 42; the other states have less than 30 hospitals.

POSTGRADUATE CONTINUATION COURSES FOR VETERAN AND CIVILIAN PHYSICIANS

Compiled by the Council on Medical Education and Hospitals for Period Jan. 1, 1947 to July 15, 1947

Medical schools, hospitals, state medical societies and other medical educational institutions and organizations are providing the Council with a growing body of information on courses designed primarily to meet the needs of returning medical officers. These have been incorporated into the lists on these pages. They are not specifically designated for veterans, since most if not all of them may also be open to interested civilian physicians. Furthermore, all courses listed which were not designed primarily for physician veterans are also open to qualified returning medical officers.

Note that each course is listed only once, without cross indexing, so that in some instances a prospective student should look under more than one heading for a desired course.

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Postgraduate Continuation Courses for Practicing Physicians—Jan 1, 1947 to July 15, 1947

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	ALLERGY		
University of Southern California, Division of Graduate Medicine, 3551 University Avenue, Los Angeles At: Los Angeles County Hospital	Allergy, Course No 737	4 evening lectures, 1 evening weekly, April 2, 1947	$ 25[1]
Cook County Graduate School of Medicine, 427 So. Honore Street, Chicago	Allergy	1 month, full time, 1st of every month except January	200
	Personal Course in Allergy and Related Conditions	To be announced; 10 weeks, 1 day each week	80
University of Illinois College of Medicine, 1853 West Polk Street, Chicago	Allergy	Jan. 6, 1947 Jan 5, 1948, full time	300 res 600 non res.
The American College of Allergists, Inc., 401 La Salle Medical Building, Minneapolis 2 At University of Kansas School of Medicine, Kansas City, Kan	Mississippi Valley Sectional Instructional Course in Allergy	May 5 7, 1947	35
Maine Medical Association, 177c Main Street, Waterville, Me At Boston	Allergy	Arranged, 1 2 weeks	Arranged[2]
Tufts Medical School Postgraduate Division, 30 Bennet Street, Boston At: Boston Dispensary and Pratt Diagnostic Hospital, Boston	Allergy	May 19 23, 1947, 5 days, full time	40
University of Michigan Medical School, Department of Postgraduate Medicine, 1313 East Ann Street, Ann Arbor, Mich.	Allergy	Spring, 1947, 1 week	30
Long Island College of Medicine, Joint Committee on Postgraduate Education, 1313 Bedford Avenue, Brooklyn 2	Allergy	April 14, 1947, 8 sessions, once a week, part time	20
Columbia University Faculty of Medicine, 630 West 168th Street, New York 32 At: Mount Sinai Hospital	Allergy PM 36 (Medicine)	March 10 22, 1947, 12 days, part time	20
Columbia University—At: New York Postgraduate Medical School, 303 East 20th Street, New York 3	Allergy	Jan 10 Feb. 28, 1947, 2 months, part time	25
	Allergy	April 7-25, 1947, 3 weeks, full time	200
New York Medical College, Flower and Fifth Avenue Hospitals, 1 East 105th Street, New York	Allergy	Jan -March, 1947, 2 months, once weekly	50
Graham Thomas Clinic, 201 West Franklin Street, Richmond, Va.	Fellowship in Allergy	Jan 1, 1947, 1 year, in selected cases 6 months	None
	ANATOMY		
Cook County Graduate School of Medicine, 427 So. Honore Street, Chicago	Surgical Anatomy on Cadaver and Clinical Program	Feb. 17, 1947, 2 weeks, full time	$150
	Surgical Anatomy on Cadaver and Clinical Program	March 17, 1947, 2 weeks, full time	150
	Surgical Anatomy on Cadaver and Clinical Program	April 14, 1947, 2 weeks, full time	150
	Surgical Anatomy on Cadaver and Clinical Program	May 12, 1947, 2 weeks, full time	150
	Surgical Anatomy on Cadaver and Clinical Program	June 9, 1947, 2 weeks, full time	150
	Surgical Anatomy on the Cadaver	To be announced 10 weeks, part time	125
University of Maryland School of Medicine, Lombard and Greene Street, Baltimore	Surgical Anatomy	15 weeks, Jan 27 June 7, 1947	150
University of Michigan Medical School, 1313 East Ann Street, Ann Arbor, Mich.	Anatomy	March June, 1947 15 days, full time	30
	Anatomy	Spring, 1947, 1 day a week	30
Creighton University School of Medicine, 306 North 14th Street, Omaha	Anatomy	Arranged, 3 months	None
Long Island College of Medicine, Joint Committee on Postgraduate Education, 1313 Bedford Avenue, Brooklyn 2	Anatomy	Jan 6-April 18, 1947, 4 months, twice weekly	75

References will be found on page 946.

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1947 to July 15, 1947—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	ANATOMY—Continued		
New York Medical College, Flower and Fifth Avenue Hospitals, 1 East 105th Street, New York	Anatomy of the Abdomen	Spring, 1947, 100 hours, arranged	150
	Applied Anatomy for the Anesthetist	Spring, 1947, 125 hours, arranged	275
	Applied Anatomy for the General Surgeon	Spring, 1947, 250 hours, arranged	375
	Applied Anatomy for the Otolaryngologist	Spring, 1947, 150 hours, arranged	275
	Anatomy for the Orthopedic Surgeon	Spring, 1947, 100 hours, arranged	150
	Anatomy of the Thorax	Spring, 1947, 100 hours, arranged	150
	Applied Anatomy of Urogenital System	Arranged, 130 hours, arranged	300
	Microscopic Anatomy—Histogenesis	Arranged, 20 weeks, half time	150
University of North Carolina School of Medicine, Chapel Hill, N. C.	Anatomy	Arranged	25
Duke University School of Medicine, Durham, N. C.	Anatomy	Arranged, 3 months or longer, full time	150 per qtr.
	ANESTHESIOLOGY		
George Washington University School of Medicine, 1335 H Street, N. W., Washington, D. C. At: School of Medicine and various hospitals	Intensive Refresher Course in Anesthesiology	Feb. 10-14, 1947, 1 week, full time	50
Cook County Graduate School of Medicine, 427 So. Honore Street, Chicago	Inhalation Anesthesia	First of every month, 1 month, full time	200
University of Minnesota Medical School, Minneapolis 14 At: Center for Continuation Study	Anesthesiology	To be announced, 3, 6, or 12 days	15 25 50
New York Medical College, Flower and Fifth Avenue Hospitals, 1 East 105th Street, New York	Clinical Anesthesiology	Arranged, 3 months, full time	250
New York Polyclinic Medical School and Hospital, 341 West 50th Street, New York 19	Applied Anesthesia	Jan. 1947, 3 months	Not given
	Applied Anesthesia	April, 1947, 3 months	300
Columbia University—At: New York Postgraduate Medical School, 303 East 20th Street, New York 3	Anesthesia [5]	Arranged, 2 weeks, full time	100
New York University College of Medicine, 477 First Avenue, New York At: Beth Israel Hospital	Anesthesiology	Jan. 6, 1947, 24 weeks, full time	400
Duke University School of Medicine, Durham, N. C.	Anesthesiology	Arranged, 3 months or longer, full time	150 per qtr.
University of Texas Medical Branch, 912 Avenue B, Galveston, Texas	Inhalation, Spinal Block, Intravenous Anesthesia	Arranged, 3-6 weeks	Not given
	ARTHRITIS		
Columbia University—At: New York Postgraduate Medical School, 303 East 20th Street, New York 3	Arthritis and Allied Rheumatic Disorders	Jan. 7-Feb. 25, 1947, 2 months, part time	$ 45
	Arthritis and Allied Rheumatic Disorders	April 21-25, 1947, 5 days, full time	45
Long Island College of Medicine, Joint Committee on Postgraduate Education, 1313 Bedford Avenue, Brooklyn 2	Arthritis	April 14, 1947, 8 sessions, once a week, part time	20
New York University College of Medicine, 477 First Avenue, New York 16 At: Bellevue Hospital	Arthritis and Rheumatic Disorders	Spring, 1947, 6 weeks, part time	100
	Arthritis and Rheumatic Disorders	Winter, 1947, 6 weeks, part time	100
	BACTERIOLOGY		
Columbia University—At: New York Postgraduate Medical School, 303 East 20th Street, New York 3	Clinical Bacteriology and Serology	Jan. 2-31, 1947, 1 month, part time	$100
New York Medical College, Flower and Fifth Avenue Hospitals, 1 East 105th Street, New York	Bacteriology	Arranged	100
New York University College of Medicine, 477 First Avenue, New York 16	Bacteriology	March 3, 1947, 16 weeks, part time	50 vets. 60 non-vets.
University of North Carolina School of Medicine, Chapel Hill, N. C.	Bacteriology and Immunology	Arranged	25
Duke University School of Medicine, Durham, N. C.	Bacteriology and Parasitology	Arranged, 3 months or longer, full time	150 per qtr.
	BASIC SCIENCES		
University of Southern California, Division of Graduate Medicine, 3551 University Avenue, Los Angeles 7 At: Los Angeles County Hospital	Basic Science Course No. 736	Jan. 3, 1947-Jan. 2, 1948, 1 year, part time	$200 per yr. 50 per qtr.
University of California Medical School Extension, San Francisco 22	Course in Basic Sciences	Summer, 1947	Not given [29]
	Review Course in the Basic Sciences (for preparation to specialty boards examinations)	June-Sept. 1947, 16 weeks, full time	See [3]
University of Illinois College of Medicine, 1853 West Polk Street, Chicago	Basic Medical Sciences	Jan. 1, 1947, 36 weeks, full time	600 [4]
Tufts Medical School Postgraduate Division, 30 Bennet Street, Boston, Mass. At: Pratt Diagnostic Hospital	Review of Basic Sciences	May-June, 1947, 8 weeks, full time	200 [1]
University of Minnesota Medical School, Minneapolis 14 At: Center for Continuation Study	Basic Sciences and Their Clinical Application	Jan. 6-March 20, 1947, 11 weeks, full time	20 per wk.
	Basic Sciences and Their Clinical Application	March 31-June 13, 1947, 11 weeks, full time	20 per wk.
Creighton University School of Medicine, 306 North 14th Street, Omaha	Clinical Basic Science Conference	Arranged, 3 months	None
Southwestern Medical College of Southwestern Medical Foundation, 2211 Oak Lawn, Dallas, Texas	Postgraduate Course in Basic Sciences	March 9-May 30, 1947, 12 weeks, full time	$300
University of Wisconsin Medical School, 418 North Randall Street, Madison 6, Wis.	Divisions of the Basic Sciences	Continuous	100 per mo.
	BIOCHEMISTRY		
New York University College of Medicine, 477 First Avenue, New York 16	Biochemistry	March 3, 1947, 16 weeks, part time	$75 non-vets. 65 vets.
University of North Carolina School of Medicine, Chapel Hill, N. C.	Biochemistry	Arranged	25
Duke University School of Medicine, Durham, N. C.	Biochemistry	Arranged, 3 months or longer	150 per qtr.

References will be found on page 946.

Postgraduate Continuation Courses for Practicing Physicians—Jan 1, 1947 to July 15, 1947—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	CARDIOVASCULAR DISEASE		
College of Medical Evangelists, 312 North Boyle Avenue, Los Angeles 33 At White Memorial Hospital	Cardiology	Jan 14, 1947, 12 weeks, 1 evening a week	35
American College of Physicians, 4200 Pine St, Philadelphia At: University of Southern California, Los Angeles	Cardiovascular Disease [5]	Feb 3 7, 1947, 1 week	$ 20 mem. 40 non mem
George Washington University School of Medicine, 1335 H St, N W, Washington, D C	Intensive Postgraduate Course in Cardiovascular Disease	Feb 17 21, 1947, 1 week, full time	60
American College of Physicians 4200 Pine St, Philadelphia At Emory University School of Medicine, Atlanta, Ga	Cardiovascular Disease [5]	March 31 April 5, 1947, 1 week	20 mem 40 non mem
University of Georgia School of Medicine, University Place, Augusta, Ga	Cardiology	Arranged, 2 weeks	50 res 75 non res
Cook County Graduate School of Medicine, 427 So Honore Street, Chicago	Course in Cardiovascular Renal Diseases	Feb 1947 (tentative), 10 weeks, 1 day each week	60
	Course in Cardiovascular Renal Diseases	April 1947 (tentative), 10 weeks, 1 day each week	60
American College of Physicians, 4200 Pine St, Philadelphia At Northwestern University Medical School, Chicago	Cardiovascular Disease [5]	April 21 26, 1947, 1 week	20 mem 40 non mem
Tulane University of Louisiana School of Medicine 1430 Tulane Avenue, New Orleans 13	Cardiovascular System Diseases	Feb 3 8, 1947, 5½ days, full time	25
Maine Medical Association, 177c Main St, Waterville, Me At Boston	Cardiology	Arranged, 1 2 weeks	None [1]
Tufts Medical School Postgraduate Division, 30 Bennet Street Boston, Mass At Pratt Diagnostic Hospital	Cardiology	May 12 16, 1947 5 days, full time	40
University of Michigan Medical School, 1313 East Ann Street, Ann Arbor, Mich	*Disease of the Heart*	Spring, 1947, 5 days, full time	30
University of Buffalo Medical School, 24 High Street, Buffalo	Heart Disease (Seminar)	Feb 1947, 3 days	Not given
Columbia University, 630 West 168th Street, New York 32 At. Montefiore Hospital	Advanced Cardiology	Jan June, 1947, 5 months, part time	150
At Mount Sinai Hospital	*Cardiovascular Disease*	Feb 3 March 8, 1947, 5 weeks, part time	75
Columbia University—At New York Postgraduate Medical School, 303 East 20th Street, New York 3	Cardiology	Jan 6 Feb. 24, 1947, 2 months, part time	45
	Cardiology	May 5-29, 1947, 4 weeks, full time	125
Long Island College of Medicine, Joint Committee on Post graduate Education, 1313 Bedford Avenue, Brooklyn 2	Clinical Cardiology	April 15 1947, 8 sessions, once a week, part time	20
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th Street, New York	Cardiology	April, 1947, 2 weeks, part time	150
New York Polyclinic Medical School and Hospital, 341 West 50th Street, New York 19	Diagnosis and Treatment of Diseases of the Heart	Arranged, 3 weeks, part time	75
New York University College of Medicine, 477 First Avenue, New York 16 At Beth Israel Hospital	Cardiovascular Disease	Feb 20 1947, 12 weeks, part time	50
University of Oregon Medical School, West Marquam Hill Road, Portland 1, Ore	Cardiology	Jan 13 17, 1947, 5 days, full time	50
University of Wisconsin Medical School, 418 North Randall Street, Madison 6, Wis	Observation Course in Cardiology	Jan 1947, 5 days, full time	25
	CHEMISTRY		
Duke University School of Medicine, Durham, N C	Seminars in Clinical Chemistry	Arranged, 10 12 weekly seminars	$150 per qtr
	Practical and Theoretical Instruction in Clinical Chemistry	Arranged, 3 months, full time	150 per qtr
	CHEST DISEASES		
California Tuberculosis and Health Association, 45 Second Street San Francisco At Medical Schools in Los Angeles	Tuberculosis	Arranged, 3 days 2 weeks	None
University of Southern California Division of Graduate Medicine, 3551 University Avenue, Los Angeles At Los Angeles County Hospital	Pulmonary Diseases, Course No 740 (Lectures)	April 2 1947 12 weeks, 1 evening a week	$ 50 [1]
Cook County Graduate School of Medicine, 427 So Honore Street, Chicago	Technic of Physical Examination and Diagnosis of Chest	To be announced 8 weeks, part time, 1 day each week	80
Municipal Tuberculosis Sanitarium, 5601 North Pulaski Road, Chicago	Postgraduate Course in Tuberculosis	Jan July 15, 1947, daily	None
Tulane University of Louisiana School of Medicine, 1430 Tulane Avenue, New Orleans 13	Pulmonary Diseases	Jan 27 Feb 1, 1947, 5½ days	25
State Sanatorium, Sanatorium, Miss	Chest Diseases	All year, continuously, 2 weeks	None
	Chest Diseases	Continuously, 6 months	None
Columbia University, 630 West 168th Street New York 32 At Columbia Presbyterian Medical Center	Recent Advances in the Treatment of Bronchial Asthma, Bronchiectasis and Pulmonary Emphysema	Jan 27 Feb 1, 1947, 6 days, full time	40
At Montefiore Hospital	*Medicine PM 63—Diseases of the Chest*	Jan 3 May 16, 1947, 19 weeks	60
At Mount Sinai Hospital	Medicine PM 37—Diseases of the Chest	March 10 22, 1947, 12 days, part time	30
Columbia University—At New York Post Graduate Medical School, 303 East 20th Street, New York 3	Acute and Chronic Diseases of the Chest	Jan 9 Feb 27, 1947 2 months part time	45
New York Medical College, Flower and Fifth Avenue Hospitals, 1 East 105th Street, New York	Pulmonary Tuberculosis	June, 1947, 1 month	150
Wisconsin Anti Tuberculosis Association, 324 East Wisconsin Avenue Milwaukee At Health Service Building, 1018 North Jefferson Street, Milwaukee	Essentials of Chest X Ray Films *and Their Interpretation*	Between Jan 1 July 1, 1947, 6 weeks, 2 hours a week	Not given
	DERMATOLOGY AND SYPHILOLOGY		
Cook County Graduate School of Medicine, 427 So Honore Street, Chicago	Lecture and Clinical Course in Dermatology	April 14, 1947, 2 weeks, full time	$100
	Lecture and Clinical Course in Dermatology	June 16, 1947, 2 weeks, full time	100
University of Illinois College of Medicine, 1853 West Polk Street Chicago	Postgraduate Dermatology	Feb Nov, 1947, 9 months	500
University of Kansas School of Medicine, Kansas City, Kan At University of Kansas Hospitals	Internal Medicine and Dermatology	March 17 21, 1947, 5 days	20 [6]
Tufts Medical School Postgraduate Division, 30 Bennet Street, Boston At Boston City Hospital	Dermatology B	April 14 18, 1947	30 [1]
University of Minnesota Medical School, Department of Postgraduate Education, Minneapolis 14	Continuation Course in Pathology of Skin Diseases	Jan 21 Feb 20, 1947, 1 month	50
University of Buffalo School of Medicine, 24 High Street, Buffalo	Dermatology and Syphilology (Seminar)	April, 1947, 3 days	Not given

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Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1947 to July 15, 1947—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
DERMATOLOGY AND SYPHILOLOGY—Continued			
Columbia University, 630 West 168th Street, New York 32 At Mount Sinai Hospital	Venereal and Skin Diseases	March 24-27, 1947, 4 days, part time	20
Columbia University—At New York Postgraduate Medical School, 303 East 20th Street, New York 3	Symposium on Dermatology and Syphilology[5]	May 12-17, 1947, 5 days, full time	90
	Seminar in Dermatological Histopathology[6]	May 19-23, 1947, 5 days, full time	60
New York Polyclinic Medical School and Hospital, 341 West 50th Street, New York 19	Dermatology and Syphilology	First of any month, 6 weeks, part time	100
New York Polyclinic Medical School and Hospital	Dermatology and Syphilology	First of any month, 3 months, part time	150
New York University College of Medicine, 477 First Avenue, New York 16	Industrial Dermatology	Spring, 1947, 3 weeks, part time for 2 weeks, full time for 1 week	100
At Beth Israel Hospital	Dermatology	Jan 6, 1947, 4 weeks, part time, 2 days a week	25
	Dermatology	March, 1947, 4 weeks, part time, 2 days a week	25
	Dermatology	April, 1947, 4 weeks, part time, 2 days a week	25
DIABETES			
University of Southern California, Division of Graduate Medicine, 3551 University Avenue, Los Angeles 7 At Los Angeles County Hospital	Diabetes Mellitus, Course No 739 (Lectures)	March 31, 1947, 6 weeks, 1 evening a week	$ 50[1]
Harvard University Medical School, 25 Shattuck St, Boston At Deaconess Hospital	Diabetes Mellitus and Its Relation to General Medicine	April 7-9, 1947 3 days	Not given
Columbia University—At New York Postgraduate Medical School, 303 East 20th Street, New York 3	Diabetes Mellitus, Nephritis and Hypertension	Jan 9-Feb 27, 1947, 2 months, part time	45
	Diabetes Mellitus, Nephritis and Hypertension	March 24-28, 1947, 5 days, full time	45
Long Island College of Medicine, Joint Committee on Postgraduate Education, 1313 Bedford Avenue, Brooklyn 2 At Greenpoint Hospital	Diabetes Mellitus and Its Complications	April 10, 1947, 12 sessions, once a week, part time	20
At Jewish Hospital	Diabetes	April 17, 1947, 8 sessions, once a week part time	20
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories Philadelphia 4 At Philadelphia Hospital	Diabetes Mellitus	Arranged, 2 weeks, 75 hours	150
ELECTROCARDIOGRAPHY			
Cook County Graduate School of Medicine, 427 So Honore Street, Chicago	Personal Course in Heart Disease and Electrocardiography	To be announced, 10 weeks, part time, 1 day each week	$175
	Electrocardiography and Heart Disease	To be announced, 1 month, full time	175
Michael Reese Hospital Postgraduate School 29th Street and Ellis Avenue, Chicago 16 At Michael Reese Hospital	Electrocardiographic Interpretation for Graduate Physicians	Feb 12, 1947, 12 weeks, part time, each Wednesday	50
Tufts Medical School Postgraduate Division, 30 Bennet Street, Boston At Pratt Diagnostic Hospital	Electrocardiography	March 24-28, 1947, 1 week, full time	40
	Electrocardiography II	Jan 13-15, 1947	25
Columbia University, 630 West 168th Street New York 32 At Mount Sinai Hospital	Intensive Course in Clinical Electrocardiography	April 14-19 1947, 5 days, full time	40
Columbia University—At New York Postgraduate Medical School, 303 East 20th Street, New York 3	Electrocardiography	March 17-21, 1947, 5 days, full time	50
Long Island College of Medicine, Joint Committee on Postgraduate Education, 1313 Bedford Avenue, Brooklyn 2 At Beth El Hospital	Electrocardiography and Heart Sound Recording	April 8, 1947, 8 sessions, twice a week, part time	20
At Jewish Hospital	Clinical Electrocardiography	April 14, 1947, 15 sessions, 3 times a week, part time	20
	Electrocardiography and Clinical Cardiography	April 15, 1947, 15 sessions, 3 times a week, part time	20
New York Medical College, Flower and Fifth Avenue Hospitals, 1 East 105th Street, New York	Electrocardiography	Spring, 1947, 2 weeks, part time	100
New York Polyclinic Medical School and Hospital, 341 West 50th Street, New York 19	Electrocardiographic Interpretation	Arranged, 2 weeks, 2 hours daily	75
New York University College of Medicine, 477 First Avenue, New York 16 At Bellevue Hospital and College of Medicine	Advanced Electrocardiography	March 3, 1947, 16 weeks, 2 hours a week	100
At Beth Israel Hospital	Electrocardiography	Feb 20, 1947, 12 weeks, part time	40
University of Oregon Medical School, West Marquam Hill Road, Portland 1, Ore	Electrocardiography	June 2-6, 1947 5 days, full time	50
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At Philadelphia Hospital	Electrocardiology and Cardiac Roentgenology[7]	Not given 5 days, 30 hours	60
University of Texas Medical Branch, 912 Avenue B, Galveston, Texas	Electrocardiography	Feb 3-8, 1947, 1 week, afternoons	Not given
ELECTROENCEPHALOGRAPHY			
University of Illinois College of Medicine, 1853 West Polk Street, Chicago	Electroencephalography	Arranged, 3 weeks, full time	$ 50
Columbia University—At New York Postgraduate Medical School, 303 East 20th Street, New York 3	Clinical Electroencephalography[5]	March 3-28, 1947, 4 weeks, part time, Monday and Friday	60
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At Graduate Hospital of Pennsylvania Institute	Electroencephalography	Arranged, 6 Thursdays, 36 hours	150
ENDOCRINOLOGY			
College of Medical Evangelists, 312 North Boyle Avenue, Los Angeles 33 At White Memorial Hospital	Practical Endocrinology	Feb 13, 1947, 6 weeks, 6 hours, Thursday evening	20
Tufts Medical School Postgraduate Division, 30 Bennet Street, Boston At Pratt Diagnostic Hospital	Endocrinology	May 26-30 1947, 1 week, full time	$ 40
University of Michigan Medical School, Department of Postgraduate Medicine, 1313 East Ann Street, Ann Arbor, Mich	Endocrinology and Metabolism	Spring, 1947	15
Columbia University, 630 West 168th Street, New York 32 At Mount Sinai Hospital	Endocrinological Diseases	March 24-29, 1947, 5 days, part time	20
Long Island College of Medicine, Joint Committee on Postgraduate Education, 1313 Bedford Avenue, Brooklyn 2 At Jewish Hospital	Disorders of the Endocrine System	April 14, 1947, 8 sessions, twice a week	20
New York Medical College, Flower and Fifth Avenue Hospitals, 1 East 105th Street, New York	Endocrinology	May, 1947, 2 weeks, full time	150
	Physiology of the Endocrine System	Mid winter and spring, one month, arranged	75
Duke University School of Medicine, Durham, N C.	Endocrinology	Arranged 3 months or longer, full time	150 per qtr

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Postgraduate Continuation Courses for Practicing Physicians—Jan 1, 1947 to July 15, 1947—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	ENDOSCOPY		
Colorado State Medical Society, Republic Building, Denver At Shirley Savoy Hotel	Bronchoscopy	Feb 19 21, 1947 (Indefinite)	None [1]
Cook County Graduate School of Medicine, 427 So Honore Street, Chicago	Practical Cystoscopy	Jan 20, 1947 and every 2 weeks thereafter, 2 weeks, full time	$150
University of Illinois College of Medicine, 1853 West Polk Street, Chicago	Bronchoesophagology and Laryngeal Surgery	Feb 1947, 2 weeks, full time	150
	Bronchoesophagology and Laryngeal Surgery	May, 1947, 2 weeks, full time	150
Columbia University, 630 West 168th Street, New York 32	Bronchoscopy [5]	April 21 May 9, 1947, 3 weeks, part time	250
At Columbia Presbyterian Medical Center	Gastroscopy [5]	Arranged, 2 months, 3 times a week	250
Columbia University—At New York Postgraduate Medical School, 303 East 20th Street, New York 3	Cystoscopy and Endoscopy	Jan 5, 1947, 15 sessions, part time	75
	Cystoscopy and Endoscopy	Jan 6, 1947, 15 sessions, part time	75
	Cystoscopy and Endoscopy	Feb 17, 1947, 15 sessions, part time	75
	Cystoscopy and Endoscopy	Mar 5, 1947, 15 sessions, part time	75
	Cystoscopy and Endoscopy	April 7, 1947, 15 sessions, part time	75
	Cystoscopy and Endoscopy	May 2, 1947, 17 sessions, part time	75
	Cystoscopy and Endoscopy	May 19 1947, 15 sessions, part time	75
New York Medical College, Flower and Fifth Avenue Hospitals, 1 East 105th Street, New York	Gastroscopy	Arranged, 2 weeks, full time	200
	Peritoneoscopy	Arranged	100
New York University College of Medicine, 477 First Avenue, New York 16 At New York Eye and Ear Infirmary	Broncho Esophagology [5]	April 1947, 16 days part time for 12 days, full time for 4 days	250 [8]
Temple University School of Medicine, 3400 North Broad Street, Philadelphia	Laryngology and Broncho Esophagology	Arranged, probably Feb, 1947, 2 weeks (60 hours)	250
	Laryngology and Broncho Esophagology	Arranged, probably April, 1947, 2 weeks (60 hours)	250
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At Graduate Hospital	Bronchoesophagology, Gastroscopy and Laryngeal Surgery	Arranged, 2 weeks, 85 hours	250
	Cystoscopy, Chromoureteroscopy and Pyelography	Arranged 6 weeks, 36 hours	300
	FRACTURES		
Cook County Graduate School of Medicine, 427 So Honore Street, Chicago	Intensive Course in Fractures	April 28, 1947, 2 weeks, full time	$125
	Intensive Course in Fractures	June 23, 1947, 2 weeks, full time	125
	Special Course in Fractures	To be announced, 10 weeks, part time	125
Long Island College of Medicine, Joint Committee on Postgraduate Education, 1313 Bedford Avenue, Brooklyn 2 At Kings County Hospital	Fractures	April 5, 1947, 10 sessions, once weekly, part time	20
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St, New York	Fractures and Allied Trauma	Fall and Spring, 1947, 3 weeks, full time	150
	GASTROENTEROLOGY		
University of Southern California, Division of Graduate Medicine, 3551 University Avenue Los Angeles 7 At Los Angeles County Hospital	Gastroenterology Course No 741	May 12, 1947, 12 evening lectures, 1 evening weekly	$ 50 [1]
Cook County Graduate School of Medicine, 427 So Honore Street, Chicago	Personal Course in Gastroscopy and Gastroenterology	March 24 1947, 2 weeks, full time	200
	Personal Course in Gastroscopy and Gastroenterology	May 19 1947, 2 weeks, full time	200
Tulane University of Louisiana School of Medicine 1430 Tulane Avenue, New Orleans 15	Gastrointestinal Diseases	Jan 20 25 1947, 5½ days, full time	25
Maine Medical Association, 177c Main Street, Waterville, Me At Boston	Gastroenterology	Arranged 1 2 weeks	Arranged [2]
University of Michigan Medical School, Department of Postgraduate Medicine, 1313 East Ann Street, Ann Arbor, Mich	Gastroenterology	Spring 1947, 1 week	30
University of Buffalo School of Medicine, 24 High Street, Buffalo	Gastroenterology (Seminar)	March 1947, 3 days	Not given
Columbia University 630 West 168th Street, New York 32 At Mount Sinai Hospital	Gastro intestinal Diseases	Feb [illegible] March 11, 1947, 5 weeks, part time	75
Columbia University—At New York Postgraduate Medical School 303 East 20th Street, New York 3	Gastroenterology	Jan 8 Feb 26 1947, 2 months, part time Wednesdays	45
	Gastroenterology	April 7 18, 1947, 10 days, full time	75
Long Island College of Medicine, Joint Committee on Postgraduate Education, 1313 Bedford Avenue, Brooklyn 2 At Greenpoint Hospital	Gastroenterology	April 16 1947 12 sessions, twice weekly	20
At Jewish Hospital	Gastroenterology	April 8, 1947, 8 sessions, twice weekly part time	20
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St, New York	Gastroenterology	Arranged 1 month	100
	Physiology and Chemistry of the Gastrointestinal Tract Digestion	Arranged 1 month	150
New York Polyclinic Medical School and Hospital 341 West 50th Street, New York 19	Gastroenterology	Jan 1947 6 weeks part time	50
	Gastroenterology	April, 1947, 6 weeks, part time	50
New York University College of Medicine, 477 First Avenue, New York 16 At Bellevue Hospital	Clinical Gastroenterology	Feb 19, 1947, 20 weeks part time, 1 day a week	100
At Beth Israel Hospital	Gastroenterology	Jan 6, 1947 8 weeks part time, Monday and Friday	55
At Lenox Hill Hospital	Gastroenterology	Winter, 1947, 7 weeks, part time, 2 mornings a week	50
	Gastroenterology	Spring 1947, 7 weeks part time, 2 mornings a week	50
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At Graduate Hospital	Clinical Gastroenterology	Arranged 16 weeks, 500 hours	400
University of Wisconsin Medical School, 418 North Randall Madison 6 Wis	Observation Course in Gastroenterology	Feb 1947, 5 days full time	25
	HEMATOLOGY		
University of Southern California Division of Graduate Medicine, 3551 University Avenue Los Angeles 7 At Los Angeles County Hospital	Hematology, Course No 7[illegible]8	Jan 6 1947, 12 weeks 1 evening a week	$ 50 [1]
Tufts Medical School Postgraduate Division, 30 Bennet Street, Boston	Hematology C	June 9 20, 1947, 2 weeks, full time	100
Columbia University 630 West 168th Street, New York 32 At Montefiore Hospital	Clinical Hematology	Feb 4 June 17 1947 20 weeks part time	75
At Mount Sinai Hospital	Hematology	Feb 17 March 15, 1947, 4 weeks, part time	50

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Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1947 to July 15, 1947—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	HEMATOLOGY—Continued		
Columbia University—At: New York Postgraduate Medical School, 303 East 20th Street, New York 3	Clinical Hematology	Jan. 8-Feb. 26, 1947, 2 months, part time	30
Long Island College of Medicine, Joint Committee on Postgraduate Education, 1313 Bedford Street, Brooklyn 2 At: Jewish Hospital	Clinical Hematology	April 17, 1947, 8 sessions, once weekly, part time	Not given
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Hematology	Spring, 1947, 2 months, Tuesday afternoons	50
New York University College of Medicine, 477 First Avenue, New York 16 At: Lenox Hill Hospital	Hematology	Spring, 1947, 6 weeks, part time	50
	HOSPITAL ADMINISTRATION		
University of Minnesota Medical School, Department of Postgraduate Education, Minneapolis 14 At: Center for Continuation Study	Continuation Course in Hospital Administration[9]	Feb. 3-8, 1947, 1 week	Not given
	INDUSTRIAL HEALTH		
Yale University School of Medicine, 353 Cedar Street, New Haven, Conn.	Advanced Industrial Medicine	Feb. 4, 1947 (beginning), 10 sessions	$ 10
Columbia University—At: New York Postgraduate Medical School, 303 East 20th Street, New York 3	Symposium on Industrial Medicine	June 9-13, 1947, 5 days, full time	45
University of Pittsburgh School of Medicine, Pittsburgh	Industrial Hygiene Engineering	Second semester of college year, 16 weeks, part time	20
	Industrial Toxicology	Second semester of college year, 16 weeks, part time	Not given
Wisconsin State Board of Health, Industrial Hygiene Institute, State Office Bldg., 1 W. Wilson St., Madison 2, Wis. At: Three cities in Wisconsin (to be selected)	Industrial Health Clinic	Probably May 1947	None
	MALIGNANT DISEASES		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33 At: White Memorial Hospital	Malignant Tumors	Jan. 15, 1947, 10 weeks, one evening week	30
University of Kansas School of Medicine, 39th Street and Rainbow Boulevard, Kansas City, Kan.	Radiology and Cancer	June 9-13, 1947, 5 days	$ 20[6]
University of Minnesota Medical School, Department of Postgraduate Education, Minneapolis 14	Continuation Course in Cancer for Physicians	Jan. 2-4, 1947, 3 days	15
	MEDICINE, GENERAL		
University of Alabama School of Medicine, University, Ala.	Medicine	March, 1947, 1 week	None
Los Angeles County Tuberculosis and Health Association, 117 West Ninth Street, Los Angeles 15	Postgraduate Medical Symposium for Negro Physicians (Essentially)	March 10-14, 1947, 4 days (8 hours)	None
Research Study Club of Los Angeles, Inc., 727 West 7th Street, Los Angeles At: Elk's Club	Sixteenth Annual Mid-Winter Postgraduate Clinical Convention	Jan. 20-Feb. 4, 1947, 2 weeks—clinical; 5 days—cadaver	$ 75 ea. course
University of Southern California, Division of Graduate Medicine, 3551 University Avenue, Los Angeles 7	Clinical Review of Internal Medicine	Jan. 6, 1947, 12 weeks, full time	250[1]
At: Los Angeles County Hospital	Clinical Review of Internal Medicine (Course 730)	May 5, 1947, 12 weeks, full time	250[1]
	Nine-Month Internal Medicine Course (731)	Following course 730, 9 months	750[10]
	Recent Advances in Diagnosis and Treatment, Course No. 743	Jan. 2, 1947, 3 periods, 12 weeks, each Thursday evening	Not given
	Recent Advances in Diagnosis and Treatment, Course No. 743	March 27, 1947, 3 periods, 12 weeks, each Thursday evening	Not given
University of California Medical School, University Extension, San Francisco 22	Course in Internal Medicine and General Surgery (for General Pract.)	Feb. 10-14, 1947, 5 days, full time	Not given
College of Medical Evangelists, 312 North Boyle Avenue, Los Angeles 33 At: White Memorial Hospital	Varicose Veins	Feb. 4 and 11, 1947, 2 evenings	15
	General Medicine	Feb. 6, 1947, 10 weeks, 1 eve. a wk.	35
Colorado State Medical Society, Republic Building, Denver At: Shirley Savoy Hotel	Internal Medicine	Feb. 19-21, 1947 (indefinite)	None[1]
George Washington University School of Medicine, 1335 H St., N.W., Washington 5, D. C.	Intensive Postgraduate Course in Diseases of Metabolism	Feb. 10-14, 1947, 1 week, full time	$ 50
	Intensive Postgraduate Course in General Medicine	Feb. 10-March 7, 1947, 4 weeks, full time	200
	Intensive Postgraduate Course in Thoracic Diseases	March 3-7, 1947, 1 week, full time	50
At: Affiliated Hospitals	Intensive Refresher Course in Infectious Diseases	Feb. 24-28, 1947, 1 week, full time	50
	Intensive Postgraduate Course in Internal Medicine	Feb. 10-March 14, 1947, 5 weeks, full time	250
Medical Society of the District of Columbia, 1718 M St., N.W., Washington, D. C.	Postgraduate Course in Diagnosis	Feb. 4, 11, 18, 1947 (3 lectures)	1
Emory University Medical School, 50 Armstrong St., Atlanta, Ga. At: Affiliated Hospitals	General Internal Medicine	Arranged individually, 2 weeks to 3 months or longer, full time	125 per qtr. 12 per wk.
University of Georgia School of Medicine, University Place, Augusta, Ga.	Postgraduate Course for Negro Physicians	June 17-21, 1947, 5 days	None
	General Refresher	Intermittently, 3 weeks-3months	60 res. 75 non-res.
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Chicago Institutions	28th Annual Session, American College of Physicians	April 28-May 2, 1947, 1 week	12 non-mem None mem.
Chicago Medical Society, 30 N. Michigan Ave., Chicago	Third Clinical Conference	March 4-7, 1947, 4 days	Not given
Cook County Graduate School of Medicine, 427 So. Honore Street, Chicago	2 weeks Course in Internal Medicine	April 7, 1947, 2 weeks, full time	75
	2 weeks Course in Internal Medicine	June 2, 1947, 2 weeks, full time	75
University of Illinois College of Medicine, 1853 West Polk Street, Chicago	Refresher Course in General Practice for Veteran Physicians	Arranged, 3 mo., full time	75 res. 100 non-res.
St. Elizabeth Hospital, LaFayette, Ind.	Postgraduate Medical Four Year Extension Course	First Tuesday of every mo., 3 hours per mo., 12 mo. per year	None
State University of Iowa School of Medicine, Iowa City	Informal Refresher Courses	Jan.-June, 1947, 6 mo., part time	None
	Physician's Monthly Clinical Conference	March 24-29, 1947, 6 days	None
	Physician's Monthly Clinical Conference	April 28-May 3, 1947, 6 days	None
	Physician's Monthly Clinical Conference	May 26-31, 1947, 6 days	None
	Physician's Monthly Clinical Conference	June 23-28, 1947, 6 days	None

References will be found on page 946.

Postgraduate Continuation Courses for Practicing Physicians—Jan 1, 1947 to July 15, 1947—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	MEDICINE, GENERAL—Continued		
University of Kansas School of Medicine, 39th and Rainbow Blvd, Kansas City 3 Kan At University of Kansas Hospitals	Internal Medicine and Dermatology	March 17-21, 1947, 5 days	20[6]
Kentucky State Medical Association, 620 S Third Street, Louisville Ky	Refresher Course in Internal Medicine	January 1947, 6 weeks continuously	None
	Refresher Course	Continuously, 6 weeks	None
Flint Goodridge Hospital of Dillard University, New Orleans	Postgraduate Course for Physicians	June 23-28, 1947, 6 days, full time	Not given
New Orleans Graduate Medical Assembly, 1430 Tulane Ave, New Orleans 13 At Municipal Auditorium	Tenth Annual Meeting	Feb 24-27, 1947, 4 days	Not given
Tulane University of Louisiana School of Medicine, 1430 Tulane Avenue, New Orleans 15	General Refresher Course	Jan 6-April 19, 1947, 1 week or more, full time	25 per wk.
	Review of General Medical Practice	Jan 6-Feb 8, 1947, 1 mo	Not given
	Review of General Medical Practice (Continued)	March 3-April 12, 1947, 6 weeks	Not given
	Infectious Diseases	March 31-April 5, 1947, 5½ days, full time	25
	Nutritional and Metabolic Diseases	March 24-29, 1947, 5½ days	25
Mississippi State Board of Health Jackson, Miss At Tulane University of Louisiana, New Orleans	Neoplastic diseases	April 7-12, 1947, 6 days	None[11]
American College of Physicians 4200 Pine St, Philadelphia 4 At Tufts Medical School, Boston	Blood Disorders	Spring 1947, 1 week	20 mem 40 non mem
The Lahey Clinic, 605 Commonwealth Ave, Boston At New England Mutual Hall, Boston	Postgraduate Assembly	Jan 13-16 1947, 3 days, full time	25[12]
Massachusetts Medical Society, 8 The Fenway, Boston At Boston and various parts of state	Postgraduate Instruction	Throughout year	None
	Review Lecture Course for Practitioners and Former Medical Officers	Feb 18-May 15, 1947, 3 mo, part time 2 evenings a week	Not given
Tufts Medical School Postgraduate Division 30 Bennet Street, Boston At Boston Dispensary and Pratt Diagnostic Hospital,	Clinical Medicine	Feb 3-March 1 1947, 4 weeks	50
	Diseases of the Bone and Joints	March 17-21, 1947, 5 days, full time	40[1]
	General Refresher	April 7-June 28 1947, 12 weeks, full time	300
	Internal Medicine	Arranged, 1 year or 6 mo	800 per yr
	Internal Medicine	April 7-May 2, 1947, 1 mo, full time	100
	Mixed Service	April 1947, 1 year, full time	500[1]
University of Michigan Medical School, Department of Postgraduate Medicine 1313 East Ann Street, Ann Arbor, Mich	Application of the Basic Sciences to Clinical Medicine	March 5-April 26 1947, 8 weeks, full time	200
	Clinical Internal Medicine	Feb 6-April 24, 1947 part time, Thursdays	50
	Course for Practitioners	Feb 3-28 1947, 4 weeks full time	100
	Diseases of the Blood and Blood Forming Organs	Spring 1947, 1 week	30
	Internal Medicine	March-April, 1947, 2 mo	50 per mo.
	Practitioners Course	Spring, 1947, 2 days	None
At University of Michigan Hospital	Personal Courses	Throughout year, varying lengths	30 per mo
American College of Physicians, 4200 Pine St, Philadelphia 4 At University of Michigan Medical School, Ann Arbor, Mich	Internal Medicine	April 7-19, 1947, 2 weeks	40 mem 80 non mem
University of Michigan Medical School, Department of Postgraduate Medicine, 1313 East Ann Street, Ann Arbor, Mich At Battle Creek Kalamazoo, Mich	Practitioners' Course	Spring 1947, 2 days	None
At Bay City, Mich	Practitioners' Course	Spring 1947, 2 days	None
At Flint, Mich	Practitioners' Course	Spring 1947, 2 days	None
At Grand Rapids, Mich	Practitioners' Course	Spring 1947, 2 days	None
At Houghton, Mich	Practitioners' Course	Spring 1947, 2 days	None
At Ironwood, Mich	Practitioners' Course	Spring 1947, 2 days	None
At Jackson Lansing, Mich	Practitioners' Course	Spring 1947, 2 days	None
At Marquette, Mich	Practitioners' Course	Spring 1947, 2 days	None
At Powers, Mich	Practitioners' Course	Spring 1947, 2 days	None
At Saginaw, Mich	Practitioners' Course	Spring 1947, 2 days	None
At Traverse City, Mich	Practitioners' Course	Spring 1947, 2 days	None
At Upper Peninsula, Mich	Practitioners' Course	Spring 1947, 2 days	None
University of Minnesota Medical School, Department of Postgraduate Education, Minneapolis At Center for Continuation Study	Conferences in Medical Technology	Jan 31-Feb 1 1947, 2 days	Not given
	Conferences in Medical Technology	March 14-15, 1947, 2 days	Not given
	Conferences in Medical Technology	April 11-12, 1947, 2 days	Not given
	Conferences in Medical Technology	May 2-3, 1947, 2 days	Not given
	Conferences in Medical Technology	May 23-24, 1947, 2 days	Not given
	Conferences in Medical Technology	June 6-7, 1947, 2 days	Not given
	Medicine	To be anounced 3 days	15
	Medicine	To be announced 6 days	25
	Medicine	To be anounced, 12 days	50
Mississippi State Sanatorium, Sanatorium, Miss	Internal Medicine	Continuously, all year, 2 weeks	None
	Internal Medicine	Continuously, all year, 6 mo	None
Creighton University School of Medicine, 306 North 14th Street Omaha	General Medicine	Arranged, 3 mo	None
	Special Courses	Individually arranged, 3 mo	None
University of Nebraska College of Medicine, 42nd St and Dewey Ave, Omaha At Beatrice, Neb	Extramural Continuation Courses	Arranged, 1 day afternoon clinics, evening lectures	None
At Chadron, Neb	Extramural Continuation Courses	Arranged, 1 day afternoon clinics, evening lectures	None
At Grand Island, Neb	Extramural Continuation Courses	Arranged, 1 day afternoon clinics, evening lectures	None
At Hastings, Neb	Extramural Continuation Courses	Arranged, 1 day afternoon clinics, evening lectures	None
At Kearney, Neb	Extramural Continuation Courses	Arranged, 1 day afternoon clinics, evening lectures	None
At McCook, Neb	Extramural Continuation Courses	Arranged, 1 day afternoon clinics, evening lectures	None
At Norfolk, Neb	Extramural Continuation Courses	Arranged, 1 day afternoon clinics, evening lectures	None
At North Platte, Neb	Extramural Continuation Courses	Arranged, 1 day afternoon clinics, evening lectures	None

References will be found on page 946

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1947 to July 15, 1947—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	MEDICINE, GENERAL—Continued		
At Scottsbluff, Neb	Extramural Continuation Courses	Arranged, 1 day afternoon clinics, evening lectures	None
At Omaha, Neb	Intramural Continuation Courses	Arranged, 1 and 2 weeks	None
Rutgers University, New Brunswick, N. J. At Cooper Hospital, Camden, N. J	Rutgers Plan, Postgraduate Medical Course	Jan 1, 1947, and every qtr, part time, 66 hours per qtr	24 per qtr
Long Island College of Medicine, Joint Committee on Postgraduate Education, 1313 Bedford Avenue, Brooklyn 2	Sterility	April 8, 1947, 12 sessions, once weekly, part time	20
At Greenpoint Hospital	Hypertension and Nephritis	April 9, 1947, 8 sessions, once weekly, part time	20
At Jewish Hospital	Peripheral Vascular Diseases	April 14, 1947, 8 sessions, once weekly, part time	20
Cornell University Medical College, 1300 York Ave, New York At Bellevue Hospital	Six Months' Postgraduate Course in Internal Medicine	First of each month, 6 mo	250
	2 Weeks' Refresher Course	April 1 14, 1947, 2 weeks	50
Columbia University, 630 West 168th Street, New York 32	Internal Medicine	April 1 June 29, 1947, 3 mo	55 per mo
At Montefiore Hospital	Peripheral Vascular Diseases	Feb 24 June 27, 1947, 18 weeks, part time	75
At Mount Sinai Hospital	Diseases of the Kidneys	Feb 17 21, 1947, 5 days, part time	10
	Diseases of the Liver	Feb 3 20 1947, 18 days, part time	20
	Diseases of Metabolism	March 12 25, 1947, 13 days, part time	20
	Geriatrics	March 27, 1947, 8 weeks, part time	50
	Symposium on Internal Medicine	Feb 3 March 29, 1947, 8 weeks, full time	200
Columbia University—At New York Postgraduate Medical School 303 East 20th Street, New York 3	Diseases of the Liver and Biliary Tract	Jan 8 Feb 26 1947, 2 mo, part time	30
	Diseases of the Liver, Biliary Tract and Pancreas—Introductory Course	May 7 June 11, 1947, 5 weeks, part time	60
	Diseases of the Thyroid and Other Endocrine Glands, and Disorders of Nutrition	Jan 10 Feb 28, 1947, 2 mo, part time, Fridays	45
	Peripheral Vascular Diseases	Jan 7 Feb 25, 1947, 2 mo, part time, Tuesdays	30
	Peripheral Vascular Diseases	April 28-May 2, 1947, 5 days, full time	45
	Problems in Diagnosis	Jan 6 Feb 24 1947, 2 mo, part time, Mondays	45
	Psychological Aspects of Internal Medicine	Jan 10 Feb 28, 1947, 2 mo, part time, Fridays	25
	Seminar in Internal Medicine	Jan 6-Feb 28 1947, 2 mo, full time	225
	Symposium on Internal Medicine	June 16 27, 1947, 10 days, full time	75[13]
New York Medical College, Flower and Fifth Avenue Hospitals, 1 East 105th Street, New York	Immunology	Arranged	50
	Internal Medicine	Monthly, 1 mo	150
	Parasitology	Arranged	75
	Peripheral Vascular Diseases	Spring 1947, 2 mo, 2 half days a week	100
New York Polyclinic Medical School and Hospital 341 West 50th Street, New York 19	Course for General Practitioners	Jan 1, 1947, 6 weeks	100
	Course for General Practitioners	Jan 1947, 3 mo	200
	Course for General Practitioners	Feb 15 1947, 6 weeks	100
	Course for General Practitioners	Feb 15, 1947, 3 mo	200
	Course for General Practitioners	April 1, 1947 6 weeks	100
	Course for General Practitioners	April 1, 1947, 3 mo	200
	Course for General Practitioners	May 15 1947, 6 weeks	100
	Course for General Practitioners	May 15, 1947, 3 mo	200
	Courses in Forensic Medicine	January through June, 1947, Variable	Variable
New York University College of Medicine 477 First Avenue, New York 16 At Bellevue Hospital	General Review for General Practitioners	Jan 6 April 3, 1947, 12 weeks, full time	175 vets 225 non vets
	Internal Medicine	Jan 6, 1947, 12 weeks, part time	150
	Internal Medicine	April 3 1947, 12 weeks, part time	150
At Lenox Hill Hospital	General Review for General Practitioners	Spring 1947 8 weeks, full time	125
New York University College of Medicine, 477 First Avenue, New York 16	Mycology	Jan 1947, 8 weeks, Monday, Wednesday, Thursday, part time	50
University of North Carolina School of Medicine, Extension Department, Chapel Hill N C	University Postgraduate Course in Clinical Medicine	Winter 1947, 1 day a week for 8 weeks	Not given
At Various towns in North Carolina	University Postgraduate Course in Clinical Medicine	Spring 1947, 1 day a week for 8 weeks	Not given
Duke University School of Medicine, Durham, N. C.	General Medicine	Arranged full time, 1 or 2 weeks or longer	150
	Medicine	Arranged 3 mo or longer, full time	150 per qtr
American College of Physicians, 4200 Pine St, Philadelphia 4 At University of Cincinnati School of Medicine Cincinnati	Internal Medicine with Emphasis Upon Nutrition and Metabolism	May 26 June 7, 1947, 2 weeks	40 mem 60 non mem
Cleveland Clinic, Euclid Ave at 93rd St, Cleveland	Blood and the Blood Vessels	Not given, 3 days, full time	10
Ohio State Medical Association, 1005 Hartman Theater Building, Columbus 15, O	Ohio State Medical Association, Annual Meeting (Lectures)	May 6 8, 1947, 3 days	None
Ohio State University College of Medicine, 11th and Neil Avenues, Columbus, O At University Hospital	Refresher Course in General Medicine for General Practitioners	March 17 22, 1947, 5½ days	20
University of Oregon Medical School, West Marquam Hill Road Portland 1, Ore	Special Refresher Course	Arranged, individually, full or part time	75 per mo
American College of Physicians, 4 00 Pine St, Philadelphia 4 At Lankenau Hospital	Problems in Growth and Aging	Feb 3 7, 1947, 1 week	20 mem 40 non mem
Philadelphia County Medical Society, 201 S 21st St, Philadelphia At Bellevue Stratford Hotel	Progress in Medicine	April 15 18, 1947, 4 days, full time	Mem none 5 non mem.
University of Pittsburgh School of Medicine, Bigelow Boulevard, Pittsburgh At Medical Center	Refresher Course for General Practitioners	Jan 28 March, 1947, 8 weeks	150
	Refresher Course for General Practitioners	April 22 May 25, 1947, 5 weeks	100
Tennessee State Medical Association, Doctors Building, Nashville 3, Tenn	Five Courses on Postgradute Instruction	Continuously, 10 meetings, 2 hours each	Not given
Vanderbilt University School of Medicine, Division of Postgraduate Instruction, 21 Avenue So at Edgehill, Nashville, Tenn	Medicine	May Oct 1947 1 to 3 mo, full time	100 00 3 mos

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References will be found on page 946

Postgraduate Continuation Courses for Practicing Physicians—Jan 1, 1947 to July 15, 1947—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
MEDICINE, GENERAL—Continued			
University of Texas Medical Branch, Galveston, Tex	Internal Medicine	Feb 3 8, 1947, 1 week	Not given
	Fundamental Medical Science (Review of recent advances in the Preclinical Sciences)	Feb 24 March 1, 1947, 1 week	Not given
	Tumor Conference	March 8, 1947, 1 day	5
	Tumor Conference	June 14, 1947, 1 day	5
University of Vermont College of Medicine, Pearl St, College Park, Burlington, Vt	Course for General Practice	Arranged, throughout year, 12 weeks, 3 5 hours daily	750 per yr [14]
	Course in Internal Medicine	Throughout year, min 4 weeks, 5 5 hours daily	750 per yr [14]
	General Practice, Internal Medicine, Surgery	Throughout year, beginning of any month, 1 9 mo	750 per yr [14]
Medical College of Virginia, 12th and Marshall Sts, Richmond, Va	St Philip Hospital Postgraduate Clinic for Negro Physicians	June 1947, 2 weeks	None res 5 non res
The Medical Society of Milwaukee County, 202 East Wisconsin Avenue, Milwaukee At Marquette University School of Medicine	Postgraduate Course in Internal Medicine	February 1947, 4 weeks	Not given
At Various Hospitals	Postgraduate Course in Internal Medicine	Third week in May 1947, 4 weeks	Not given
University of Wisconsin Medical School, 418 North Randall Street Madison 6, Wis	Observation Course for Specialists (Medicine and Surgery)[6]	Continuous, 1947, 2 6 mo	100 per mo
	Postgraduate Course in Thoracic Diseases [6]	March 3 8, 1947, 1 week	50
NEUROLOGY AND PSYCHIATRY			
College of Medical Evangelists, 312 North Boyle Avenue, Los Angeles 33 At White Memorial Hospital	Medical Psychology	April 3, 1947, 10 periods, 1 evening a week	20
University of Southern California, Division of Graduate Medicine, 3551 University Ave, Los Angeles 7 At Los Angeles County Hospital	Psychosomatic Medicine, Course No 742	Jan 8, 1947, 12 2 hour lectures, 1 evening weekly	50 [1]
Colorado State Medical Society, Republic Building, Denver At Shirley Savoy Hotel	Internal Medicine	Feb 19 21, 1947 (indefinite)	None [1]
Catholic University of America, Department of Psychology and Psychiatry, Washington, D C	Individual Clinical Conferences	January 1947, 1 sem, 2 hours a week	200 per sem 20 per wk
	Psychopathology	January 1947, 1 sem, 2 hours a week	200 per sem 20 per wk
	Case Seminar in Psychotherapy	January 1947, 1 sem, 2 hours a week	200 per sem 20 per wk
	Introduction to Psychiatry	January 1947, 1 sem, 2 hours a week	200 per sem 20 per wk
At St Elizabeth s Hospital	Clinical Psychiatry	January 1947, 1 sem, 2 hours a week	200 per sem 20 per wk
	Electric Shock Therapy	January 1947, 1 sem, 2 hours a week	200 per sem 20 per wk
	Individual Psychotherapy	Not given	Not given
	Neurology and Neuropathology	January 1947, 1 sem, 2 hours a week	200 per sem 20 per wk
	Intensive Postgraduate Course in Psychiatry	Feb 24 March 7, 1947, 2 weeks, full time	100
George Washington University School of Medicine, 1335 H St Washington 5, D C	Intensive Postgraduate Course in Neurology and Neurosurgery	March 10 14, 1947, 1 week, full time	50
	Intensive Postgraduate Course in Psychiatry and Neurology	Feb 24 March 14, 1947, 3 weeks, full time	150
	Intensive Postgraduate Course in Psychiatry	Feb 24 March 7, 1947, 2 weeks, full time	100
At St Elizabeth's Hospital	Psychiatric Conferences	January July 1, 1947, 2 sem, 1 hour a week	200 per sem 10 per wk
Tulane University of Louisiana School of Medicine, 1430 Tulane Avenue, New Orleans 12	Nervous System Diseases	March 17 22 1947 5½ days,, full time	25
Metropolitan State Hospital, Waltham, Mass At Boston Psychopathic Hospital, Boston	Twelfth Postgraduate Seminar in Neurology and Psychiatry	March 19 May 14 1947, 2 mo, 1 day per week 5 30 to 10 p m	None
Metropolitan State Hospital, Waltham, Mass	Twelfth Postgraduate Seminar in Neurology and Psychiatry	Jan 3 April 25 1947, 1 day a week, 7 10 p m	None
At Walter E Fernald State School, Waverly, Mass	Pediatric Neuropsychiatry (Child Psychiatry)	March 17 May 12, 1947, 2 mo, 1 day per week 5 30 to 10 p m	None
American Institute for Psychoanalysis, 266 West End Ave, New York 23	The Analytic Process [6]	Feb 7 1947 15 weekly sessions	30
	Problems in the Patient Analyst Relationship [5]	Every other week, beginning Feb 27, 1947 every week from May 1, 14 weeks	20
At New School for Social Research	At War with Ourselves Self acceptance and Self condemnation	Feb 3, 1947, 15 weekly lectures	25
	Confronting the Modern World Problems of Children and Adolescents	Feb 4 1947, 15 weekly lectures	15
Columbia University, 630 West 168th Street, New York 32 At Montefiore Hospital	Review of Neuropsychiatry	April 14 May 9 1947, 4 weeks, full time	100
At Mount Sinai Hospital	Recent Advances in Neurology and Psychiatry	March 31 April 4 1947, 5 days, full time	40
Columbia University—At New York Postgraduate Medical School 305 East 20th Street, New York 3	Neurological and Psychiatric Diagnosis and Treatment in General Practice	March 17 29, 1947, 2 weeks, full time	75
	Psychoanalysis in General Medicine	Jan 6 March 26 1947, 12 sessions, part time, Wednesdays	50
New York Medical College Flower and Fifth Avenue Hospitals 1 East 105th St, New York	Neurology	Spring 1947, 1 mo, full time	200
	Psychoanalysis and Psychiatry	Feb 7 May 16, 1947, Friday eves, 15 hours	40
New York University College of Medicine, 477 First Avenue, New York 16 At Lenox Hill Hospital	Neurology	Spring 1947, 6 weeks, part time afternoons a week	75
	Psychiatry	Spring 1947, 6 weeks, part time, 2 afternoons a week	60
Duke University School of Medicine, Durham N C	Neuropsychiatry	Arranged 3 mo or longer, full time	150 per qtr
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories Philadelphia 4 At Philadelphia Hospital	Clinical Psychiatry	Arranged, 8 weeks, 240 hours	160
At Medical Laboratories and Affiliated Institutions	Clinicobiologic Neurology and Psychiatry [5]	Arranged 10 weeks, 250 hours	100

References will be found on page 946

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1947 to July 15, 1947—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
NEUROLOGY AND PSYCHIATRY—Continued			
Tennessee State Medical Association, 4 University Center Building, Memphis, Tenn. At: County Seat towns through the State (45)	Psychiatry as Applied to the Practice of Medicine	Jan 1, 1947-Jan. 1, 1949, 14 week course at 45 centers; 1 week in each center	10
University of Texas Medical Branch, Galveston, Tex.	Electroencephalography	By arrangement	Not given
	Electro shock Therapy	By arrangement	Not given
	Technical Procedures of the Neurological Examination	By arrangement	Not given
NEUROSURGERY			
Duke University School of Medicine, Durham, N. C.	Neurosurgery	Arranged, 3 mo. or longer, full time	150 per qtr.
NUTRITION			
College of Medical Evangelists, 312 North Boyle Avenue, Los Angeles 33 At White Memorial Hospital	Nutrition	Feb. 12, 19, 26, 1947, afternoons and evenings	35
New York Medical College, Flower and Fifth Avenue Hospitals, 1 East 105th St, New York	Nutrition	Arranged, 1 mo.	150
Duke University School of Medicine, Durham, N. C.	Nutrition	Arranged, 3 mo. or longer, full time	150 per qtr.
OBSTETRICS AND GYNECOLOGY			
Alabama State Health Department and Jefferson County Health Department, Birmingham, Ala At Slossfield Health Center	Institute for Negro Physicians	July 15-17, 1947, 3 days	$ 15
University of Alabama School of Medicine, University, Ala.	Obstetrics and Gynecology	Feb, 1947, 1 week	None
College of Medical Evangelists, 312 North Boyle Avenue, Los Angeles 33 At White Memorial Hospital	Obstetrics and Gynecology	Jan. 6, 1947, 6 weeks, 2 days a week, part time	35
	Obstetrics and Gynecology	March 31-June 18, 1947, 6 weeks, 2 days a week, morings	35
George Washington University School of Medicine, 1335 H St, N.W., Washington, D C	Intensive Postgraduate Course in Gynecology	Feb 24-28, 1947, 1 week, full time	50
	Intensive Refresher Course in Obstetrics and Gynecology	Feb. 17-March 7, 1947, 3 weeks, full time	150
Chicago Maternity Center, 1336 S Newberry Street, Chicago	Postgraduate Training in Obstetrics and Gynecology	July, 1947, 4 months, full time	None
Cook County Graduate School of Medicine, 427 So. Honore Street, Chicago	Personal Course in Gynecological Surgery	Jan, 1947 (Tentative) 4 weeks, part time	80
	Personal Course in Gynecological Surgery	March, 1947 (Tentative) 4 weeks, part time	80
	Personal Course in Gynecological Surgery	May, 1947 (Tentative) 4 weeks, part time	80
	Personal Course in Gynecological Surgery	July, 1947 (Tentative) 4 weeks, part time	80
	Practical and Didactic Course in Office Gynecology	Jan 1, 1947 (Tentative) 4 weeks, part time	80
	Practical and Didactic Course in Office Gynecology	Jan 31, 1947 (Tentative) 4 weeks, part time	80
	Practical and Didactic Course in Office Gynecology	March, 1947 (Tentative) 4 weeks, part time	80
	Practical and Didactic Course in Office Gynecology	May, 1947 (Tentative) 4 weeks, part time	80
	Practical and Didactic Course in Office Gynecology	July, 1947 (Tentative) 4 weeks, part time	80
	Obstetrics	March 3, 1947, 2 weeks, full time	150
	Obstetrics	April 28, 1947, 2 weeks, full time	150
	Obstetrics	June 2, 1947, 2 weeks, full time	150
	Operative and Office Gynecology	March 17, 1947, 2 weeks, full time	150
	Operative and Office Gynecology	April 14, 1947, 2 weeks, full time	150
	Operative and Office Gynecology	May 12, 1947, 2 weeks, full time	150
	Operative and Office Gynecology	June 16, 1947, 2 weeks, full time	150
University of Kansas School of Medicine, Kansas City, Kan At: University of Kansas Hospitals	Obstetrics and Gynecology	April 21-25, 1947, 5 days	20[6]
Tulane University of Louisiana School of Medicine, 1430 Tulane Avenue, New Orleans 13	Obstetrics and Gynecology	Jan 13-18, 1947, 5½ days, full time	25
University of Maryland School of Medicine, Lombard and Greene Sts., Baltimore	Review of Gynecology, Oncology and Female Urology	Arranged, 10 weeks	125
	Review of Obstetrics and Gynecology	Jan 15-July 1, 1947, 5½ months	150
University of Minnesota Medical School, Department of Postgraduate Education, Minneapolis 14 At: Center for Continuation Study	Obstetrics and Gynecology	To be announced, 3 days	15
	Obstetrics and Gynecology	To be announced, 6 days	25
	Obstetrics and Gynecology	To be announced, 12 days	50
Creighton University School of Medicine, 306 North 14th Street, Omaha	Obstetrics and Gynecology	Arranged, 3 months	None
Long Island College of Medicine, Joint Committee on Postgraduate Education, 1313 Bedford Avenue, Brooklyn 2 At: Cumberland Hospital	Complications of Pregnancy	April 8, 1947, 8 sessions, twice a week	20
At: Israel Zion Hospital	Gynecological Pathology	April 9, 1947, 12 sessions, once a week, part time	50
At: Jewish Hospital	Female Sex Endocrinology	April 14, 1947, 10 sessions, once a week, part time	20
At: Long Island College of Medicine	Manikin	April 15, 1947, 10 sessions, once a week, part time	20
	Prenatal Care	April 17, 1947, 8 sessions, once a week, part time	20

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1. Plus $5 00 registration fee.
2. Stipend provided when needed.
3. To be announced
4. G. I. Bill of Rights for Veterans.
5. Specialists only.
6. No fee to World War II veterans.
7. Specialists in Internal Medicine.
8. All instruments furnished.
9. Hospital administrators.
10. Registration $15 00.
11. Fellowship—State Board of Health
12. No charge for physicians on active duty in armed forces.
13. $45 00 for 5 days.
14. Or pro rated.
20. For medical officers only.

(To be concluded next week)

Correspondence

LEPROSY

To the Editor —Commenting on the letter of Dr Cristobal Manalang of San Lazaro Hospital, Manila, P I, in The Journal, October 19, page 407, the main points of special interest which he considers are that (1) the essential cause of leprosy is a "virus" stage of Mycobacterium leprae, (2) the disease is contracted up to the age of 4 years by frequent and prolonged contact and (3) microscopically negative as well as positive cases serve to transmit the disease He remarks that if his views are sound they should lead to revision of public health procedures in leprosy by focusing efforts on the protection of children Dr Manalang suggests a study of children of leprous persons in the United States, and he points to the advantage of studying the disease in this country rather than in foreign fields

As to Dr Manalang s views relating to the "virus' stage of M leprae, judgment must be reserved To one who has seen a number of persons unquestionably infected during adult life the emphasis on childhood infection seems too strong One is prepared to consider sympathetically the view that all types of cases may be communicable, though this is contrary to the usual opinion That the public health management of leprosy needs "humanizing,' as Dr Manalang puts it, is obvious to any serious student of the problem Indeed, current practice, under American jurisdiction, is based too much on misinformation and too little on established facts The problem of control must be considered for each area separately on the basis of experience, for example measures that might be justified in areas where the disease spreads fairly freely, as Hawaii or the Philippine Islands, would be unnecessary in the greater part of the United States, where the disease shows little or no tendency to be communicable

Of special interest to dermatologists is Dr Manalang s assertion that the early lesions of leprosy are likely to be confused with those of lupus erythematosus, tuberculosis, syphilis or Boeck s sarcoid While these conditions may on superficial study be mistaken for leprosy or vice versa, the laboratory tests that should always be made would speedily confirm or exclude a diagnosis of leprosy, since the conditions mentioned would be likely to be confused only with the form of leprosy that yields characteristic microscopic findings The proposal that the subject deserves study by the Section on Dermatology and Syphilology of the American Medical Association merits friendly consideration

G W McCoy M D, New Orleans

COLD PACKS FOR PREVENTION OF MUMPS ORCHITIS

To the Editor —In reference to the communication from Novak in The Journal, October 26, page 472, suggesting that cold packs would be a protection for the testes in the orchitis of mumps, it should be pointed out that the pathologic process in mumps orchitis" is apparently an acute hydrocele which causes secondary strangulation edema fibrosis and atrophy of the testis rather than a true testis inflammation

Incision and drainage of the acute hydrocele immediately relieves the pressure on the testis and protects it from further strangulation atrophy A series of cases treated in this manner was reported by Robert A Burhans in the *Journal of Urology* 54 547 (Dec) 1945

David Rosenbloom, M D, Los Angeles

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS
EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Board in Specialties were published in The Journal, Dec 7, page 880

BOARDS OF MEDICAL EXAMINERS

Alabama *Examination* Montgomery, Jan 21 23 Sec, Dr B F Austin, 519 Dexter Ave, Montgomery

Arizona * Phoenix January Sec, Dr J H Patterson, 826 Security Bldg, Phoenix

California *Examination* Los Angeles March 10 13 Sec, Dr Frederick N Scatena, 1020 N St, Sacramento 14

Colorado * Denver, Jan 7 10 Sec, Dr J B Davis, 831 Republic Bldg Denver 2

Delaware *Examination* Dover, Jan 14 16 *Endorsement* Dover, Jan 21 Sec, Medical Council of Delaware, Dr J S McDaniel, 229 S State St, Dover

Georgia Atlanta and Augusta, June Sec, State Examining Boards, Mr R C Coleman 111 State Capitol, Atlanta 3

Hawaii Honolulu, Jan 13 16 Sec, Dr S E Doolittle, 881 S Hotel St, Honolulu 53

Idaho Boise Jan 14 Dir, Bureau of Occupational Licenses Miss Agnes Barnhart 355 State Capitol Bldg, Boise

Indiana *Examination* Indianapolis June Exec Sec Board of Medical Registration and Examination Miss Ruth V Kirk, 627 K of P Bldg, Indianapolis

Kentucky *Examination* Louisville Dec 16 18 Sec, State Board of Health, Dr P E Blackerby, 620 S Third St, Louisville 2

Minnesota * Minneapolis, Jan 21 23 Sec Dr J F Du Bois, 230 Lowery Medical Arts Bldg, St Paul 2

Mississippi *Reciprocity* Jackson December Asst Sec, State Board of Health, Dr R N Whitfield, Jackson 113

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Current Medical Literature

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

146:637-766 (Aug.) 1946

- Theoretical Study of Composition of Alveolar Air at Altitude. W. O. Fenn, H. Rahn and A. B. Otis.—p. 637.
- Effect of Hemorrhage on Plasma Amino Nitrogen of Dog. D. L. Kline.—p. 654.
- Effect of Infusion of Renin on Flow and Protein Content of Lymph of Anesthetized Dogs. Florence W. Haynes and Esther Hardenbergh.—p. 666.
- Influence of Hepatectomy on Relative Concentrations of Protein Components of Dog Plasma as Determined by Electrophoresis. Muriel Platt Munro and Annabel Avery.—p. 673.
- Effect of Intra-Arterially Injected Adrenalin on Blood Flow, Sugar Retention and Lactate Output of Leg Tissues of Anesthetized Cats. F. R. Griffith, Julia E. Lockwood and T. A. Loomis.—p. 677.
- Dark Adaptation of Color Anomalous. A. Chapanis.—p. 689.
- Effect of Para-Aminopropiophenone Induced Methemoglobinemia on Oxygenation of Working Muscle in Human Subjects. J. Tepperman, O. Bodansky and B. J. Jandorf.—p. 702.
- Respiratory Metabolism of Human Subjects During Prolonged Exposures to Simulated Altitudes of 8,000 and 10,000 feet. S. A. D'Angelo.—p. 710.
- Pyridoxine Deficiency in Dogs as Affected by Level of Dietary Protein. Agnes Fay Morgan, Mary Groody and Helen E. Axelrod.—p. 723.
- Simultaneous Determinations of Blood Volume by Co and Dye (T 1824) Under Various Conditions. W. S. Root, F. J. W. Roughton and M. I. Gregersen.—p. 739.

American Journal of Public Health, New York

36:963-1104 (Sept.) 1946

- *Illumination Standards. M. A. Tinker.—p. 963.
- Recent Developments in Murine Typhus Fever Control. J. S. Wiley.—p. 974.
- Race Relations in Community Health Organization. P. B. Cornely.—p. 984.
- Health Education Program in Puerto Rico. Alice Miller Johnson.—p. 993.
- Modern Treatment of Syphilis. E. W. Thomas.—p. 1002.
- *Refrigeration in Food Control Program. H. S. Adams.—p. 1007.
- What Good Are Health Museums? B. Gebhard.—p. 1012.
- Appraisal Forms and Sanitation Standards Used in Michigan Community Health Project. H. J. Dunsmore.—p. 1016.
- Gonococcus Examinations: Comparison of Slides, Mailed Slants and Immediate Plates. Grace Eldering and Evelyn Palser.—p. 1023.
- *Dangers Associated with Use of Living "Attenuated" Typhus Vaccine. J. F. Sadusk Jr. and H. Kuhlenbeck.—p. 1027.
- Place of Entomologist in Public Health. T. A. Olson.—p. 1031.
- Use of Chlorine Dioxide in Water Treatment. G. P. Vincent and J. F. Synan.—p. 1035.

Illumination Standards.—Tinker points out that codes of lighting have been issued by the Illumination Engineering Society either alone or jointly with the American Institute of Architects. He thinks that more satisfactory approach to hygienic lighting might be achieved by coordinating the work of engineers, physiologists and psychologists. It is obvious that visual work should not be done at critical levels of illumination. There should be an adequate margin of safety to provide for individual variation. For such visual tasks as reading good sized print (10 to 11 point) on a good quality paper, 10 to 15 foot candles should provide hygienic conditions when one's eyes are normal. For the reading of newsprint, 15 to 20 foot candles should be adequate. In situations involving the reading of handwriting and other comparable tasks, 20 to 30 foot candles seems desirable. For tasks comparable to discrimination of 6 point type there should be 30 to 40 foot candles. For the most severe tasks encountered in workday situations 40 to 50 foot candles will be found adequate. There is no valid experimental work now available that indicates a need for over 50 foot candles intensity for adequate visual discrimination. These suggestions hold for school children as well as for adults. Intensity of illumination cannot be prescribed without coordinating it with other factors such as distribution of light and brightness contrast.

Refrigeration for Food.—In a survey of 300 restaurants, Adams found that the refrigerator temperature in 26 per cent of them exceeded 50 F. While 50 F. is generally accepted as the maximum allowable temperature for the storage of many perishable foods, a temperature several degrees lower is preferable. For fresh meat a range of 35 to 40 F. is recommended, and for poultry 29 to 32 F. Food should not be stored on top of cooling units or on the drip pan below the unit, since such a practice restricts air circulation and may contribute to frosting of the unit. Refrigerator shelves should not be covered with paper, linoleum or similar material, since this causes stagnation of air, creates excessive sweating of products and increases operating expense. Fresh meat should be stored so there is a complete circulation of cool air around it. Placing large amounts of food in a single container should be avoided. Ultraviolet light in conjunction with refrigeration is used mainly as an inhibitor to microbic growth. Reduction of air borne infection and removal of objectionable odors from cold storage boxes is also claimed when ultraviolet light is used. Ultraviolet rays have little penetrating power, so that even very thin films of dirt or moisture may shield the micro-organisms from the damaging effect of the radiation. The question of rancidity must also be recognized. Butter, cream, lard and fat sausages exposed to direct radiation will become rancid and must be protected by storing in a covered container. Fats or fish likewise are adversely affected by short wavelengths of light and by ozone.

Dangers of "Attenuated" Living Typhus Vaccine.—Sadusk and Kuhlenbeck give an account of difficulties encountered by Japanese health authorities following the administration of a biliated living murine typhus vaccine. In a group of 290 persons inoculated with this vaccine, 218 (70 per cent) developed symptoms and serologic manifestations of typhus fever. There was 1 fatality. The record of the use of living typhus vaccine presents a series of frank failures. The authors stress the favorable results which have been recently obtained against epidemic typhus by the use of a killed ether extracted yolk sac vaccine.

Anesthesiology, New York

7:477-598 (Sept.) 1946

- Anesthesia in Surgical Treatment of Congenital Pulmonic Stenosis. M. H. Harmel and A. Lamont.—p. 477.
- Pontocaine—Dextrose—Ephedrine for Spinal Anesthesia. J. K. Potter and R. J. Whitacre.—p. 499.
- Effect of Pentothal Alone and in Combination with Oxygen or Nitrous Oxide-Oxygen on Arterial Blood Gases. G. D. Barton, W. R. Wicks and H. M. Livingstone.—p. 505.
- Lethal Hypothermia in Dogs of Various Ages. B. De Boer and H. E. Ederstrom.—p. 518.
- *Use of Curare for Abdominal Surgery in Seriously Injured Patients. E. A. Doud and G. Shortz.—p. 522.
- Question of Cerium Oxalate as Prophylactic Against Postoperative Vomiting. T. Gordh and H. Rydin.—p. 526.
- Stages and Signs of Pentothal Anesthesia: Physiologic Basis. B. Etsten and H. E. Himwich.—p. 536.
- Rotameter in Anesthesia. R. Foregger.—p. 549.
- Regional Anesthesia by Intravenous Route (Slight Modification of Bier's Method). L. Garcia Herreros.—p. 558.

Curare for Abdominal Surgery.—The intravenous administration of curare (intocostrin) was employed by Doud and Shortz as an adjunct to anesthesia in 26 cases of severe abdominal and thoracoabdominal injuries. Ether, with the oroendotracheal absorption technic, and nitrous oxide-oxygen were the agents in all cases. No untoward effects have been observed. Doses of curare sufficiently large to produce respiratory depression or paralysis of short duration did not cause hypotension. Deaths occurring in the series could not be attributed to curare. The surgeons declared that the relaxation was excellent and that the operating time was decreased because manipulation of intraperitoneal contents was easier, exposure readily obtained and closure greatly facilitated. The element of shock present in association with severe abdominal wounds does not appear to contraindicate the use of curare as an anesthesia adjunct.

Annals of Internal Medicine, Lancaster, Pa.

25:403 584 (Sept) 1946

*Evaluation of Several Methods for Treating Graves' Disease Available Today J H Means —p 403
Penicillin Therapy Alone in Neurosyphilis Analysis of Clinical Results G D Gammon J H Stokes and others —p 412
Evaluation of Sulfonamide Mixtures and Various Adjuvants for Control of Sulfonamide Crystalluria H F Flippin J G Reinhold with technical assistance of Lillian Pollack and Elaine Clausen —p 433
*Immunization Against Influenza J E Salk and T Francis Jr —p 443
Hepatic Insufficiency I Pathophysiology and Clinical Aspects S S Lichtman —p 453
Colorado Tick Fever L Florio, E R Mugrage and Mabel O Stewart —p 466
Association of Acute Pulmonary Lesions with Infections of Throat Commission on Acute Respiratory Diseases —p 473
Carbon Tetrachloride Poisoning Report of 1 Case with Necropsy and 1 Nonfatal Case with Clinical Laboratory Studies W B Martin, I H Dyke Jr , F L Coddington and A M Snell —p 488
Reiter s Disease with Prolonged Auriculoventricular Conduction W Feiring —p 498
*Intoxication Resulting from Administration of Massive Doses of Vitamin D with Report of 5 Cases G W Covey and H H Whitlock —p 508

Methods for Treating Hyperthyroidism —Means believes that the antithyroid drugs such as thiouracil when used in combination with iodine in the preparation of patients with hyperthyroidism for thyroidectomy provide a more complete preparation than has been available heretofore As between treatment of hyperthyroidism by thyroidectomy after preparation with an antithyroid drug in combination with iodine and treatment by prolonged use of an antithyroid drug alone, the author believes that the scales still tip in favor of surgery Treatment with radioactive iodine is an effective way of producing a remission in the thyrotoxicosis of hyperthyroidism, but a final evaluation of how it compares with other modes of treatment must await observation of more cases and over a longer period of time particularly with respect to late untoward side effects, malignancy and renal damage

Immunization Against Influenza — Salk and Francis employed a vaccine which consisted of a suspension of formaldehyde inactivated influenza viruses and contained representative strains of both type A and type B The culture medium for the virus was the chick embryo, and the extraembryonic fluids constituted the immediate source During the epidemic of influenza A that occurred throughout the United States in the winter of 1943-1944, 12,500 students in the specialized training program were involved in studies conducted uniformly but independently by members of the Commission on Influenza in six investigating groups in different parts of the country The estimate that vaccination was 75 per cent effective assumes that the attack rate in the control half of the population under study was not influenced by the presence of vaccinated persons but was the expected rate had vaccination not been done Observations which have a bearing on this point suggest that the assumption may be incorrect The general opinion has been that the duration of the effectiveness of influenza is a matter of weeks or months but the authors think that such statements have been based on questionable evidence or have been made without due consideration of all of the factors involved From recently reported studies evidence is available to support the contention that the duration of effectiveness of influenza vaccination is considerably longer than a few months when vaccine of suitable potency is employed Reactions to influenza vaccine correspond in severity and character to reactions following the administration of typhoid vaccine Although incontrovertible evidence is now available that the resistance of man to infection by the viruses of influenza A and B can be enhanced, it is also evident that the problem of controlling epidemics of influenza by means of immunization cannot be approached only from the point of view of affording individual protection

Intoxication from Massive Doses of Vitamin D — Covey and Whitlock state that vitamin D in massive doses is a powerful and dangerous drug which should be used with caution and that there are definite contraindications to its use It mobilizes calcium from the trabeculae of the bones and thus raises the blood calcium level It often produces cellular degeneration in various organs of the body, and this is most obvious in the kidney The degenerated cells become the repository for calcium The fat tissue of the body is rapidly burned up Nitrogen may accumulate in the blood, presumably because of inability of the damaged kidney to excrete it It is also apparent that mild intoxication with this drug is probably harmless unless it is permitted to continue over a long time and that complete restitution of the injured tissues usually takes place In 4 of the 5 patients observed by the authors ranging in age from 29 to 68 years, vitamin D was taken in dosage larger than is considered safe, namely 150 000 units per day Two of the 5 patients were victims of arteriosclerosis and hypertension, conditions which have been said to contraindicate the use of this drug Two patients increased the dosage voluntarily much beyond the amount ordered by the physician The mental status of the first patient, while not obviously psychotic was known to have deteriorated in comparison with previous observations It is possible that psychic disorders, especially in the aged, should be regarded as a contraindication to the use of this substance in massive dosage The most common symptoms were nausea, vomiting and headache Associated with these symptoms there was a group of findings indicating renal injury The authors conclude that the use of this substance should always be carefully supervised

Archives of Internal Medicine, Chicago

78:255-368 (Sept) 1946

Tropical Ulcers and Cutaneous Diphtheria A A Liebow P D Mac Lean, J H Bumstead and L G Welt —p 255
*Methemoglobinemia Treatment with Ascorbic Acid M Carnrick B D Polis and T Klein —p 296
Loffler s Syndrome Associated with Creeping Eruption (Cutaneous Helminthiasis) Report of 26 Cases D O Wright and E M Gold —p 303
*Treatment of Gummatous Hepatic Syphilis with Penicillin Report of 2 Cases H A Tucker and D D Dexter —p 313
Gastroenterology Review of Literature from July 1944 to June 1945 W I Palmer, W E Ricketts and S N Maimon —p 323

Methemoglobinemia. Treatment with Ascorbic Acid.— Carnrick and his associates say that in the absence of cardiac or pulmonary disease further study of the blood to establish or exclude the presence of methemoglobin is of considerable importance They recently encountered 2 patients presenting cyanosis as an important symptom In 1 the disease is of unusual interest in that a spontaneous formation of methemoglobin was apparently the cause of the cyanosis In the other patient sodium nitrite therapy was the cause of the cyanosis Methemoglobinemia is commonly accompanied not only with cyanosis but also with disturbances in gastrointestinal function, frequently diarrhea has been noted In 1 of the patients here presented the combination of cyanosis and gastrointestinal symptoms was prominent In both patients methemoglobinemia was suspected and confirmed by laboratory studies Of particular importance in both cases was the striking response of the cyanosis to treatment with ascorbic acid with concomitant alleviation of all clinical symptoms The first patient was given 500 mg of ascorbic acid daily by mouth in divided doses for three days In the second patient 500 mg of ascorbic acid was given intravenously Within four hours there was a noticeable decrease in the amount of cyanosis An additional 500 mg of ascorbic acid was injected intravenously during the remainder of the day in three divided doses Fifty-six hours after the initial therapy the hemoglobin level had fallen from 3 9 Gm to 0 4 Gm per hundred cubic centimeters Treatment of methemoglobinemia has been undertaken in the past by the use of intravenously administered methylthionine chloride but the authors think that ascorbic acid is more desirable for this purpose

Penicillin in Hepatic Syphilis —According to Tucker and Dexter active late syphilis of the liver is a condition rarely demonstrated clinically The initial and essential lesion is the gumma Two methods are available for proving the presence of active hepatic gummas The first and more reliable method is to make a biopsy, a procedure not without risk The second method is to employ a therapeutic test In the 2 cases reported here, penicillin was used The patients received 920,000 and 3 200 000 Oxford units respectively of commercial sodium penicillin intramuscularly, with dramatic alleviation of acute symptoms and sustained objective and subjective improvement over observation periods of six hundred and eighty-six and four hundred and ninety one days These results show that visceral gummas heal under treatment with commercial penicillin mixtures at least as well as they do under other forms of antisyphilitic treatment. The apparently nontoxic properties of penicillin recommend it particularly in cases in which disease of the liver is present. In the second of these 2 cases the diagnosis was substantiated also by biopsy.

Archives of Surgery, Chicago

53:247-358 (Sept.) 1946

*Pathologic Intervertebral Disk and Its Consequences: Cause and Treatment of Chronic Pain Low in Back and Subject of Herniating Intervertebral Disk. O. R. Hyndman.—p. 247.
Acute Superior Mesenteric Artery Thrombosis: Recovery Following Extensive Resection of Small and Large Intestines. H. W. Meyer.—p. 298.
Zephiran Chloride for Preoperative Preparation of Hands. D. L. Lovell.—p. 304.
Repair of Defects of Skull, with Special Reference to Periorbital Structures and Frontal Sinus. O. A. Turner.—p. 312.
Chemosurgical Treatment of Cancer of Nose: Microscopically Controlled Method. F. E. Mohs.—p. 327.
New Method of Leg Exercises. J. K. Narat and A. F. Cipolla.—p. 345.
Reaction of Tissue to and Fate of Oxidized Cellulose in Peritoneal Cavity of Dog. F. J. Burns.—p. 348.
Nontraumatic Spontaneous Rupture of Spleen. I. Silverman and A. P. Randazzo.—p. 355.

Chronic Back Pain and Herniating Intervertebral Disk.—Hyndman presents evidence that degeneration and disintegration of intervertebral disk in the low lumbar region is the predominant cause of chronic pain low in the back. Herniation and rupture of a disk is an advanced stage of degeneration and is associated with the syndrome of compression of a nerve root. The process of degeneration of the nucleus pulposus and annulus fibrosus is a prerequisite to herniation. Whatever role trauma may play, it is only an accessory one. The syndrome of chronic pain low in the back is due to a weakened lumbar or lumbosacral joint. The syndrome of radiating pain in sciatic distribution is due to compression of a nerve root. These two syndromes are separate entities. They are due to different aspects of the same pathologic process and hence may exist independently or combined. Treatment of the degenerating disk consists in removal of the pathologic tissue. The result is contingent on the development of a new fibrocartilaginous disk that serves to fuse the adjacent vertebrae into a mechanical unit. There are a number of different types of herniation.

Blood, New York

1:367-458 (Sept.) 1946

Further Observations on Effect of Benzene on Strain of Myeloid Chloroleukemia in Mice and on Changes Produced in Leukemic Cells by the Chemical. C. M. Flory, I. D. Steinhardt and J. Furth.—p. 367.
Cellular Changes Produced by Extracts of Human Organs. L. A. Erf, D. L. Turner and F. R. Miller.—p. 379.
Monocytic Leukemia and Tuberculosis. E. L. Heller and C. H. Hiles.—p. 387.
Plasma Cell Leukemia. W. T. Moss and L. V. Ackerman.—p. 396.
Morphologic Examination of *Blood* and Sternal Marrow of 9 Patients Treated with Thiouracil. C. J. Gessler.—p. 407.
Sternal Marrow Studies in Thyrotoxicosis Treated with Thiouracil and Review of Literature Regarding Thiouracil Effects on Blood. Stella H. Sikkema, Ethel W. Thewlis and O. O. Meyer.—p. 411.
Effect of Thiouracil on Leukemia. L. R. Limarzi, R. J. Kulasavage and C. L. Piram.—p. 426.

Cancer Research, Baltimore

6:529-592 (Oct.) 1946

Transplantability and Presence of Virus in Spontaneous Sarcomas and Fibromas of Chickens in Relation to Age of Tumor Bearing Animal. F. D. Reynals.—p. 529.
Study of Five Transplantable Chicken Sarcomas Induced by Viruses. F. Duran-Reynals and E. W. Shrigley.—p. 535.
Transplantability of Lymphoid Tumors, *Embryonal Nephromas* and Carcinomas of Chickens. F. Duran-Reynals.—p. 545.
Some Effects of Aromatic Hydrocarbons on Sulfur Metabolism and Tumor Induction in Mice. H. G. Crabtree.—p. 553.
Stimulation and Retardation of Neoplastic Growth by Sulfhydryl Compounds. A. Brunschwig, J. Arnold and J. Edgcomb.—p. 560.
Effect of Fresh Milk on Production of Hepatic Tumors in Rats by Dimethylaminoazobenzene. Cornelia Hoch-Ligeti.—p. 563.
Water Content in Epidermis of Mice Undergoing Carcinogenesis by Methylcholanthrene. V. Suntzeff and C. Carruthers.—p. 574.
Tubular Adenomas and Testis-like Tubules of Ovaries of Aged Rats. E. T. Engle.—p. 578.

Diseases of Chest, Chicago

12:371-514 (Sept.-Oct.) 1946

Pulmonary Coccidioidomycosis. H. E. Bass, S. I. Kooperstein, M. M. Friedman and G. H. Kastlin.—p. 371.
Lobectomy and Pneumonectomy in Pulmonary Tuberculosis. D. Carr and J. S. Harter.—p. 387.
Spontaneous Hemothorax: Discussion of Problem Based on 3 Cases. A. Bernstein, E. Klosk and A. E. Parsonnet.—p. 394.
Pulmonary Actinomycosis (Report of First Case Observed in Isthmus of Panama). C. Calero.—p. 402.
Vitamin D: Its Bactericidal Action. W. Raab.—p. 409.
Obstructing Tuberculosis of Main Bronchi: A Syndrome. W. F. Hulse.—p. 416.
Pulmonary Cavitation: Difficulty in Differential Diagnosis by X-Ray. N. Diamond.—p. 422.
*Results of Thoracoplasty (933 Cases, 1,868 Operations). R. Davison.—p. 431.
*Concurrence of Superior Pulmonary Sulcus Tumor and Pulmonary Tuberculosis. D. Bernstein.—p. 436.
Noncoagulating Intrapleural Hemorrhage Following Damage to Intercostal Vessels. W. L. Meyer.—p. 444.
Role of Tuberculosis Sanatorium in Community. H. F. Schwartz.—p. 447.

***Results of Thoracoplasty.**—This review includes the* patients operated on by Davison at the Chicago Municipal Tuberculosis Sanatorium since 1933. *In all 1,868 operations* were performed on 933 patients. The 933 patients represent 7.2 per cent of admissions. In 54 patients the tuberculosis was moderately advanced and in 879 it was far advanced. There were 57 operative deaths. This represents a mortality of 6.4 per cent. A recent review of 888 cases revealed that 488, or 55 per cent, were apparently arrested. Some were improved and had negative sputum, but others had positive sputum although they were improved. Some were unimproved and had a poor prognosis. The author concludes that the results of thoracoplasty are good when one takes into consideration the advanced stage of tuberculosis at which it is usually performed. Soon there may be a preparation available which will render thoracoplasty less frequently necessary. The most promising at present is streptomycin.

Superior Pulmonary Sulcus Tumor and Pulmonary Tuberculosis.—Bernstein presents the history of a patient with active pulmonary tuberculosis who developed Pancoast's syndrome. This is the second known instance of the concurrence of superior pulmonary sulcus tumor and pulmonary tuberculosis. In the case described by Fried in 1935 the diagnosis of Pancoast's syndrome was suspected clinically and the tumor found at necropsy. Bernstein observed his patient earlier in the course of the disease, established the diagnosis ante mortem, instituted radiation therapy and subsequently confirmed the clinical finding at necropsy. The case is reported because of its rarity and its many interesting aspects. The author concludes that the presence of pulmonary tuberculosis does not preclude the possibility of the development of cancer.

Geriatrics, Minneapolis

1:341-404 (Sept.-Oct.) 1946

Special Problems of Poor Surgical Risks Among the Aged. W. B. Kountz and L. H. Jorstad.—p. 341.
Diet in Older People. W. M. Johnson.—p. 348.
Ambulatory Illness in Older Persons. M. W. Thewlis.—p. 353.
Mental Hygiene of Aging. C. L. Williams.—p. 361.
Dermatitis in Aged. S. Epstein.—p. 369.
Mortality and Life Expectancy in United States Since 1900. W. S. Groom.—p. 384.
Old Age in Alabama. B. F. Austin.—p. 391.

Indiana State Medical Assn. Journal, Indianapolis

39:385-424 (Aug.) 1946

Anterior Poliomyelitis. R. O. Ritter.—p. 385.
Evolution of Treatment of Pilonidal Cysts and Sinuses. R. L. Clark.—p. 387.
Surgical Treatment of Undescended Testicle. R. W. Lamb.—p. 392.
Clinical Observations on Use of Penicillin. H. D. Pyle.—p. 395.
Mesenteric Cysts. P. B. Arbogast.—p. 399.
The Tonsil Stump and Its Removal. C. B. Sputh Jr. and C. B. Sputh Sr.—p. 401.
Mental Hospital of the Future. M. F. Daubenheyer.—p. 404.

Journal of Lab. and Clinical Medicine, St. Louis

31:939-1052 (Sept.) 1946

Experimental Production of Generalized Arteritis and Periarteritis (Periarteritis Nodosa). H. C. Hopps and R. W. Wissler.—p. 939.
Paracolon Bacilli and Their Relation to Urinary Tract Infections. Isabelle G. Schaub.—p. 958.
*Conjoined Action of Penicillin and Bacteriophages. W. J. MacNeal, Louise Filak and Anne Blevins.—p. 974.
Interpretation of Weil-Felix Agglutination Test in Rocky Mountain Spotted Fever. H. Plotz.—p. 982.
Sulfonamides and Dark Adaptation. D. Slaughter.—p. 987.
Liver Function Tests in Neurosyphilitic Patients with Induced Vivax Malaria of Pacific and Mediterranean Origin. S. W. Lippincott, A. Marble, L. D. Ellerbrook and others.—p. 991.
Studies of Pancreatic Function: III. Effect of Ligation of Pancreatic Ducts on Amylase and Lipidase Content of Blood. N. P. Goldstein, M. Jacobson, I. R. Telford and J. H. Roe.—p. 999.
Production and Course of Alloxan Diabetes in Rat. A. Lazarow and S. L. Palay.—p. 1004.
Use of Heparin When Performing Exchange Blood Transfusions in Newborn Infants. A. S. Wiener and I. B. Wexler.—p. 1016.
Permeability of Human Placenta to Isoantibodies. A. S. Wiener and Eve B. Sonn.—p. 1020.
Quantitative Determination of Pepsin-like Substance in Urine of Normal Individuals and of Patients with Pernicious Anemia. Edith B. Farnsworth, E. Speer and H. L. Alt.—p. 1025.
Hemochromatosis: Review of Literature and Presentation of Case Without Pigmentation or Diabetes. C. Chesner.—p. 1029.

Conjoined Action of Penicillin and Bacteriophages.—Himmelweit, working in the laboratory of Sir Alexander Fleming at St. Mary's Hospital, London, observed that a strain of staphylococcus moderately resistant to both penicillin and bacteriophage became much more susceptible to destruction when exposed to the action of these two biologic agents in combination. Repetition of Himmelweit's experiments in the laboratory of MacNeal and his associates, using their own bacteriophages and cultures obtained from septic patients in their own series, has resulted in confirmation of his observations. Penicillin and the bacteriophages are not antagonistic to each other and in many instances exert a synergistic effect on the bacterial culture in the test tube. This combined action may be designated as a potentiating, conjoined or synergistic effect. This action is also manifest in the clinical use of these agents in treating otherwise malignant infections, particularly those due to staphylococci, colon bacilli and selected members of the streptococcus group. Severe types of infection with staphylococcus, such as chronic osteomyelitis, facial carbuncle and staphylococcic endocarditis, have responded to combined therapeutic use of penicillin and bacteriophages. Intestinal perforation associated with general peritonitis and bacteremia has been successfully treated with coli bacteriophage and penicillin. Bacterial endocarditis due to streptococci relatively resistant to penicillin has responded favorably to treatment with penicillin and suitable streptococcus bacteriophage.

Journal of Neurosurgery, Springfield, Ill.

3:359-460 (Sept.) 1946

*Radical Surgery and Penicillin in Brain Abscess: Method of Treatment in One Stage, with Special Reference to Cure of 3 Thoracogenic Cases. J. LeBeau.—p. 359.
Guides for Nerve Regeneration Across Gaps. P. Weiss and A. Cecil Taylor.—p. 375.
Observations on Encephalographic Findings in Cerebral Trauma. C. E. Troland, D. H. Baxter and R. Schatzki.—p. 390.
Separation at Suture Site as Cause of Failure in Regeneration of Peripheral Nerves. B. B. Whitcomb.—p. 399.
*Cortical Localization by Electroencephalography: Value of Quantitative and Statistical Analysis of Homologous Recordings Obtained Simultaneously. R. B. Aird and Sylvia C. Bowditch.—p. 407.
Anterior Rhizotomy: Accurate Identification of Motor Roots at Lower End of Spinal Cord. I. B. MacDonald, K. G. McKenzie and E. H. Botterell.—p. 421.
Hydrocephalus: Contribution Related to Treatment. O. R. Hyndman.—p. 426.

Radical Surgery and Penicillin in Brain Abscess.—LeBeau of the Neurosurgical Clinic of the Faculty of Medicine in Paris thinks that, because of penicillin, more radical operations can be undertaken for abscesses which otherwise could not have been cured. He advocates complete extirpation of the abscess, whether acute or chronic, single or multiple, even though this may mean opening up a communication between the abscess and the ventricle. In three operations before penicillin became available, complete extirpation could not be carried out and there were no survivals. In the next 14 cases (13 with penicillin and 1 without) complete and rapid cure was achieved. Ten of these 14 cases showed a serious form of abscess, including 3 which were metastatic from the lungs. The author has adopted the complete extirpation of the abscess in one stage by employing the method described by Clovis Vincent. He feels that with the use of penicillin brain abscesses should be dealt with like brain tumors.

Cortical Localization by Electroencephalography.—A modified electroencephalographic technic based on the quantitative and statistical analysis of homologous recordings obtained simultaneously has been investigated for its cortical localizing value by Aird and Bowditch. The principle involved is identical with that employed in the neurologic examination in which focal abnormal findings on one side are checked against the normal side as a control. This technic has been employed in 1,200 examinations. Definite cortical localizations were obtained in approximately one third of this abnormal group which gave a high degree of correlation with the clinical findings. Ninety per cent of the remainder had convulsive states or other conditions in which focal signs and symptoms or neurologic findings of localizing value were not obtained. In 248 patients of this group subjected to pneumoencephalography an all over correlation of 81 per cent was observed between the x-ray findings and those of the electroencephalogram obtained by means of the technic of homologous recordings. In 85 proved cortical lesions an electroencephalographic correlation of 95 per cent was obtained. It is estimated that electroencephalographic localization of lesions of a less gross character was made in approximately 20 per cent of the entire group, which correlated well with the clinical and pneumoencephalographic findings and which would not have been detected by other technics. The technic appears to be well justified when used for purposes of localization.

Journal of Pediatrics, St. Louis

29:269-416 (Sept.) 1946

Oral Manifestations of Congenital Heart Disease: Preliminary Report. A. Kauer, P. K. Losch and H. Green.—p. 269.
Use of Sulfadiazine-Sulfathiazole Mixture in Treatment of Children. D. Lehr, L. Slobody and W. Greenberg.—p. 275.
*To What Extent Does Fluorine Ingestion Lessen Tooth Decay? J. D. Boyd and V. D. Cheyne.—p. 286.
*Wilms' Tumor: Review of 16 Cases. R. M. Nesbit and F. M. Adams.—p. 295.
Developmental Graph for First Year of Life. C. A. Aldrich and Mildred A. Norval.—p. 304.
"Virus Pneumonia." E. C. Curnen.—p. 309.
Growth of Children with Diabetes Mellitus in Relationship to Level of Control of Disease. R. L. Jackson and Helen G. Kelly.—p. 316.
Hypoxia Tolerance Test of Heart in Children. E. Mannheimer.—p. 329.
Stramonium Poisoning: Diagnostic Problem with Psychiatric Implications. Lenore M. Sportsman.—p. 345.
Attempts to Adapt Murine Poliomyelitis Virus to Chick. P. Brutsaert, C. W. Jungeblut and Alice Knox.—p. 350.
Newer Agents in Treatment of Epilepsy. W. G. Lennox.—p. 356.
*Immunization Against Whooping Cough: Clinical Study. D. Lapointe.—p. 363.
Idiopathic Lipemia. Bertha M. Levy.—p. 367.
Practical Device to Hold Nursing Bottle During Bottle Feeding. H. W. Seiger.—p. 369.

Fluorine Ingestion and Tooth Decay.—Boyd and Cheyne think that certain communities in Iowa provide favorable facilities for the study of the effect of fluorine ingestion on tooth decay, since numerous wells in the state contain notable amounts of fluoride. During the summer of 1944 the authors conducted dental surveys in a region of endemic fluorosis and in three state controlled custodial institutions for children. The population studied was limited to subjects 13 years old or older. The dental findings have been analyzed not only in terms of place of residence and the regional content of fluoride in the domestic water supplies but also on the basis of whether or not mottling of enamel was evident. Dental data have been expressed in terms of the number of surfaces of permanent teeth which have been affected by decay. The data from this study support the thesis that the incidence of dental caries is lessened in areas of endemic fluorosis. The findings differ sharply from several reported studies in their quantitative aspects. The authors found caries of some degree in almost every subject; in many children with mottled enamel and with prolonged fluoride ingestion the incidence of carious tooth surfaces was high. Further, there was no evidence to indicate that the current consumption of water containing submottling amounts of fluoride had lessened the progress of caries in children whose enamel was free from mottling. There is no need to conclude from studies thus far reported that teeth undergo decay primarily because of inadequacy of fluoride ingestion or because of lack of fluorine in the physicochemical structure of the tooth. Fluorinization remains a pharmacologic, not a physiologic, method for the control of caries. These points should be borne in mind in the conduct of fluorine studies. The ultimate answer to caries control probably will lie in the furtherance of innate physiologic protective agencies rather than through pharmacologic procedures.

Wilms's Tumor.—Nesbit and Adams state that the Wilms tumor, adenomyofibrosarcoma or embryonal mixed tumor of the kidney, is the most common renal neoplasm of childhood. Previous reports on this condition give a rather poor prognosis, but half of the patients under review are still living. The 16 patients were treated at the University of Michigan Hospital during the nine year period between 1934 and 1943. Twelve of the patients had nephrectomy and 7 of these are alive three and one-half to eleven and one-half years postoperatively, a survival rate of 58.4 per cent. Two of the nephrectomized patients who had retroperitoneal infiltration with neoplasm and were given postoperative irradiation have survived four and eleven years without clinical evidences of recurrence. One child considered inoperable because of questionable chest metastases was treated by x-rays alone. She has survived ten years and today appears well. The authors believe that among the 8 living patients in the present series 3 owe their survival to irradiation and are therefore led to the conclusion that postoperative irradiation of all patients is indicated.

Immunization Against Whooping Cough. — Lapointe reviews the various types of vaccines that have been employed against whooping cough and says that Strean produced a vaccine which contained 15 billion organisms per cubic centimeter combined with 150 provisional units of pertussis endotoxoid. This combined vaccine has been under clinical trial at La Creche St. Vincent de Paul since 1942. It causes the same local and general reactions encountered with the use of the bacterial type of Sauer. La Creche houses 650 children whose ages range from birth to 4 years. The children are kept in dormitories in groups of 36. The dressing rooms and playrooms are common quarters, so that the children come in close contact. Owing to crowded facilities, isolation is impossible in the event of contagious diseases. Since 1942, 150 children have been vaccinated against whooping cough every year. All received three injections of 2 cc. at one month intervals. Because some of the children were adopted and some died, there remained only 100 vaccinated in a total enrolment of 650 at the onset of an outbreak of whooping cough on July 1, 1945. The immunized children were exposed to pertussis for a longer period than is possible in a family and to much more massive infection. In spite of these unfavorable conditions, not more than 10 per cent of the immunized children contracted pertussis and none had complications or died. Of the 550 controls 450 became ill with whooping cough and 6 developed bronchopneumonia, of whom 3 died, and 2 died of mediastinal emphysema.

New England Journal of Medicine, Boston

235:285-314 (Aug. 29) 1946

*Treatment of Subacute Bacterial Endocarditis with Penicillin in Peanut Oil and Beeswax. A. J. Geiger and Jessamine R. Goerner.—p. 285.
Statistics of Diabetes. H. H. Marks.—p. 289.
Anesthesia for Radical Mastectomy with Intravenous Pentothal Sodium and Intercostal Nerve Block. J. C. McCann.—p. 295.
Active Immunization. G. Edsall.—p. 299.
Acute and Chronic Cholecystitis, with Hydrops, Producing Partial Obstruction of Cecum.—p. 305.
Strangulated Small Intestine Due to an Adhesive Band.—p. 307.

Penicillin in Peanut Oil and Beeswax in Endocarditis.—Geiger and Goerner point out that the necessity for prolonged and uninterrupted parenteral treatment in endocarditis has imposed a considerable task on the attendants and has demanded fortitude from the patients, who must either submit to intramuscular injections night and day or tolerate continuous infusion for weeks or months. These difficulties could be eliminated if sustained serum penicillin levels were attainable by the infrequent injection of massive deposits of penicillin in a slowly absorbable form. In 2 cases of subacute bacterial endocarditis due to Streptococcus viridans the authors effected apparent cure with one or two daily injections of massive doses of penicillin in a mixture of peanut oil and beeswax. In another case which had proved refractory to cure after ten months' treatment with water soluble penicillin given parenterally an afebrile and asymptomatic state with sterility of the blood was maintained with a single daily injection of penicillin in oil and beeswax. Positive blood cultures, however, were obtained whenever this treatment was discontinued. It is believed that this patient can be kept indefinitely in remission by this simple treatment. Satisfactory serum penicillin concentrations were present for twelve hours and often for twenty-four hours following a single injection of 300,000 to 600,000 units of penicillin in oil and beeswax.

235:315-346 (Sept. 5) 1946

*Pulmonary Tuberculosis in Harvard Medical Students. H. P. Brean and L. W. Kane.—p. 315.
Dyspepsia, Ulcer and Gastric Cancer. T. J. Anglem.—p. 322.
Vaginal Ureteral Orifices. W. M. Flagg.—p. 325.
Use of Streptomycin in Colon Bacillus Peritonitis: Report of Case. S. R. Muellner and A. Rutenberg.—p. 327.
Active Immunization. G. Edsall.—p. 328.
Papillary Carcinoma of Ureter.—p. 337.
Dermoid Cyst of Ovary, with Torsion and Infarction.—p. 340.

Pulmonary Tuberculosis in Medical Students.—Brean and Kane assert that tuberculous infection of the lung remains the most serious medical problem that confronts the medical student. They review the material on pulmonary tuberculosis that has accumulated in the records of the health office at Harvard Medical School during the last twenty-three years. The incidence of significant active adult type pulmonary tuberculosis was 2.2 per cent. Although the number of cases of pulmonary tuberculosis discovered in the last two years of the medical school course was four times as great as the number developing in the first two years, the incidence of acquisition of tuberculous infection was about the same (12 or 13 per cent annually) for each academic year. This constant annual attack rate suggests that factors other than opportunity for infection are responsible for the fourfold increase in cases of pulmonary tuberculosis during the term of clinical training. The duration of disability caused by the pulmonary lesion was closely correlated with the severity of the lesion at the time of its discovery. Lesions detected by the appearance of symptoms were of greater severity and carried a far greater period of disability than those discovered by routine methods. The adoption of a program in which surveys are made at intervals more frequent than once a year led to the elimination of almost all symptom detected cases and of all major lesions. It is the belief of the authors that a semiannual examination represents the maximum interval for routine reexamination by x-ray or by tuberculin tests not only for medical students but also for nurses and interns.

New Orleans Medical and Surgical Journal

99:95-142 (Sept.) 1946

The Physician as a World Citizen. R. B. Allen.—p. 95.
Mixed Tumors of Parotid Gland. J. D. Martin.—p. 99.
Some Common Errors in Fracture Treatment. L. K. Loomis.—p. 102.

SYMPOSIUM ON SODIUM AND WATER BALANCE

Distribution of Potassium and Sodium in Body. F. N. Martin Jr.—p. 103.
Bound Water. L. M. N. Bach.—p. 107.
Sodium and Potassium in Relation to Action of Diuretics. R. G. Smith.—p. 110.
Role of Adrenal Gland in Sodium and Water Exchange. A. Segaloff.—p. 113.
Antidiuretic Hormone. T. Findley.—p. 115.
Diuretic Hormone. W. Parson.—p. 118.
Turnover of Water and Salt. P. B. Reaser and G. E. Burch.—p. 122.
Water and Sodium Balance in Congestive Heart Failure. G. Burch and P. Reaser.—p. 124.

Occupational Medicine, Chicago

2:93-182 (Aug.) 1946

What Industry Expects of Medicine. H. Strong.—p. 93.
Noxious Vapors in Aircraft Cabins. H. Speert.—p. 101.
Personality Components in Employment Problems. E. K. Clark and S. G. Law.—p. 116.
Controlled Nuclear Energy: Its Attendant Hazards and Benefits. A. H. Dowdy.—p. 126.
Atomic Disintegration. J. W. Kennedy.—p. 132.

Ohio State Medical Journal, Columbus

42:889-992 (Sept.) 1946

Surgical Treatment of Hypertension. E. W. Shannon.—p. 921.
Orthostatic Hypotension: Its Occurrence in Dermatology. J. D. Walters.—p. 925.
Simultaneous Traumatic Dislocation of Both Right Hip and Right Knee Joint: Case Report. P. C. Doran.—p. 928.
165 Acute Combined Wounds of Thorax and Abdomen. W. H. Falor, H. W. Jones and C. B. Burbank.—p. 931.
Demonstration of Tubercle Bacilli—Survey of Methods Used in Ohio and Recommended Procedures. R. J. Ritterhoff and Loretta Hurrell.—p. 940.

Psychoanalytic Quarterly, Albany, N. Y.

15:279-418 (July) 1946

Some Remarks on Freud's Place in History of Science. O. Fenichel.—p. 279.
Masochism in Paranoia. R. C. Bak.—p. 285.
Psychoanalytic Study of Ulcerative Colitis in Children. Melitta Sperling.—p. 302.
Case of Sterility. Edith Jacobson.—p. 330.
Depression Which Recurred Annually. G. Frumkes.—p. 351.

Public Health Reports, Washington, D. C.

61:1231-1258 (Aug. 23) 1946

*Tularemic Pneumonia: Treatment with Streptomycin. R. L. Peterson and R. R. Parker.—p. 1231.
Winter Survival of Aedes Aegypti (L.) in Houston, Texas. S. P. Hatchett.—p. 1234.
Precipitin Technic for Determining Mosquito Blood Meals. E. H. Arnold, S. W. Simmons and Dorothy G. Fawcett.—p. 1244.

61:1259-1294 (Aug. 30) 1946

World Health Organization: From the Office of International Health Relations, U. S. Public Health Service.—p. 1259.
Charter for World Health. T. Parran.—p. 1265.
Constitution of World Health Organization.—p. 1268.

61:1295-1338 (Sept. 6) 1946

What Is Early Tuberculosis? H. E. Hilleboe.—p. 1295.
BCG Vaccination in Denmark. J. Holm.—p. 1298.
Control of Bovine Tuberculosis in the United States: From the Office of Tuberculosis Control Division, U. S. Public Health Service.—p. 1315.

Streptomycin in Tularemic Pneumonia.—Peterson and Parker report that a man aged 29, who was an employee of the Rocky Mountain Laboratory, became suddenly ill on Feb. 23, 1946 with a chill followed by fever, sweating and headache. Cough and pleuritic pain appeared on the fourth day. On March 1 the patient was hospitalized. X-ray examination of the chest showed diffuse infiltration of the lower lobe of the left lung. Fifty thousand units of penicillin was given intramuscularly, followed by 25,000 units every three hours, but the course remained febrile. On March 6 the diagnosis of tularemic pneumonia was established by laboratory tests. Penicillin was discontinued and streptomycin hydrochloride was administered intramuscularly, 50,000 units every three hours for eighteen doses. This exhausted the available supply. Three days later a supply of streptomycin sulfate was received. On March 11 streptomycin therapy was resumed. The patient was able to sit up on March 12 and was discharged from the hospital on March 15. The patient received 0.9 million units during the first course of treatment and 1 million during the second course, a total of 1.9 million units of streptomycin. It is doubtful whether the second series was necessary. The patient had been afebrile for three days when the second course was started.

Rhode Island Medical Journal, Providence

29:641-724 (Sept.) 1946

Seven Years' Experience in Convalescent Care of Rheumatic Fever. J. P. Hubbard, L. A. Sieracki and Isabelle Jordan.—p. 655.
Hemangiomas: Should Treatment be Expectant or Active? F. Ronchese.—p. 658.
Diethylstilbestrol in Prevention of Orchitis Following Mumps. J. Savran.—p. 662.
Waterhouse-Friderichsen Syndrome. L. Abramson and F. Mayner.—p. 663.
Expanded Federal State Vocational Rehabilitation Program. C. L. New[illegible].—p. [illegible]

South Carolina Medical Assn. Journal, Florence

42:241-266 (Sept.) 1946

Sympathetic Nerve Interruption in Treatment of Organic Obstructive Vascular Disease. H. G. Smithy.—p. 241.
Pyelocystostomy in Infant. R. A. Way, G. D. Johnson and F. T. Wallace.—p. 246.
Some Technical Considerations in Thyroidectomy. F. T. Wallace.—p. 248.

42:267-294 (Oct.) 1946

Some Common Proctologic Conditions of Childhood. L. J. Hirschman.—p. 267.
Medical Treatment of Gallbladder Disease. J. A. Boone.—p. 272.
Public Health, the Politician and the Doctor. L. S. Goin.—p. 274.

Surgery, St. Louis

20:315-444 (Sept.) 1946

Treatment of Extremities Following Sudden Failure of Circulation. G. Murray, J. S. Simpson and N. A. Watters.—p. 315.
*Gangrene Following Fracture Treated with Heparin, Papaverine and Intermittent Venous Occlusion: Report of Case, Reasons for Using Heparin. J. McLean and A. B. Johnson.—p. 324.
Hydronephrosis: IV. Surgical Treatment. F. Hinman.—p. 337.
*Method for Chemical Production of Prolonged Sympathetic Paralysis: Report of Its Use in 2 Patients with Causalgia. T. B. Rasmussen and A. A. Alessi.—p. 360.
Tenon and Mortise Grafts for Bridging Metacarpal Defects Due to Gunshot Wounds. H. D. Morris.—p. 364.
Two Unusual Cases of War Wounds of Heart. P. C. Samson.—p. 373.
Effect of Atropine on Gastric Secretion Following Thermal Trauma. H. Necheles, E. Prescott and W. H. Olson.—p. 382.
Bilateral Popliteal Hernia: Case Report. A. E. Sachs and L. Rubinstein.—p. 385.
Closure of Colostomy Stoma: Simplified Plan of Management. R. O. Gregg and J. M. Mosely.—p. 388.
Experiments in Ulcerative Enteritis: Failure to Produce it by Mesenteric Lymphatic Obstruction. E. S. Sinaiko and H. Necheles.—p. 395.
Split Thickness Skin Graft as Covering Following Removal of Fingernail. E. M. Hanrahan.—p. 398.

Heparin and Papaverine in Treatment of Gangrene.—McLean and Johnson report the history of a man aged 44 who developed gangrene in the foot following trauma, including tibial fracture and an accidental cut into the anterior lower part of the leg. As a result of inadequate supply of blood to the foot, signs of beginning gangrene appeared. It was decided to try to improve the circulation by the use of heparin, papaverine hydrochloride and the principle of intermittent venous occlusion. Heparin was used to increase the fluidity of the blood. The papaverine was used for its effect in relaxing striated muscle of vessels. The apparatus for producing intermittent venous occlusion was operated for forty-five minutes every four hours for sixteen days. The triple treatment was begun five days and seven hours after the injury. At this time it appeared that amputation might be necessary eventually. The final tissue loss was small portions of the ends of the toes and all of the nails. Amputation was avoided and a satisfactory functioning foot obtained. Recovery usually is not expected after forty-eight hours' lack of blood.

Chemical Production of Prolonged Sympathetic Paralysis in Causalgia.—Rasmussen and Alessi say that the availability of a slowly absorbed local anesthetic agent (rectocaine) suggested the possibility of increasing the effectiveness of paravertebral injections in the treatment of causalgia by prolonging the resultant sympathetic paralysis. Rectocaine contains 5 per cent benzyl alcohol, propylaminobenzoate and procaine. The first patient had causalgia of the left arm. A paravertebral injection was done. Fifteen cc. of 2 per cent procaine was injected along the left side of the bodies of the first and second thoracic vertebrae, producing vasodilatation of the hand and typical Horner's syndrome within five minutes. The pain was relieved for one hour and then returned. Four days later the paravertebral injection was repeated. Before the needles were withdrawn, 2.5 cc. of rectocaine was injected into each. The sympathetic paralysis and relief of pain persisted for forty-eight hours, with the latter then returning. Since it was felt that the amount of rectocaine was insufficient a third injection was done. After 5 cc. of procaine injected at each segment had again produced prompt sympathetic paralysis and relief of pain, 4 cc. of rectocaine was introduced into each of the two needles. This time the pain did not return, and the relief persisted throughout the follow-up period of ten weeks. A second patient with causalgia was treated in a similar manner and relief was obtained

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

2:319-352 (Sept. 7) 1946

Migraine and Sympathetic Nervous Pathways. G. F. Rowbotham.—p. 319.
Crash Helmets. H. Cairns.—p. 322.
Penicillin in Treatment of Common External Eye Infections. J. Minton.—p. 324.
Hypersomnia Associated with Abnormal Hunger: Kleine-Levin Syndrome. J. Ronald.—p. 326.
Xenopus Pregnancy Test. R. F. Milton.—p. 328
Giant Urethral Calculus in Female. N. C. Lake.—p. 328.

2:353-408 (Sept. 14) 1946

Postgraduate Education and National Health Service. F. Fraser.—p. 353.
Some Principles in Selection of Medical Students. D. H. Smyth.—p. 357.
Analysis of Results of Test Given at University College, London, for Selection of Women Medical Students for Session 1945-1946. J. S. Wilkie.—p. 367.
Medical Council of India. A. H. Butt.—p. 369.
Examinations: Meditations on Painful Theme. Ff. Roberts.—p. 380.

2:409-448 (Sept. 21) 1946

*Incidence, Incubation Period and Symptomatology of Homologous Serum Jaundice. Nancy Spurling, J. Shone and Janet Vaughan.—p. 409.
Postoperative Activity and Resumption of Normal Movement: Their Influence on Embolism and Thrombosis. G. Fitzgibbon.—p. 413.
Inability to Work in Tropical Climate. H. J. Trenchard.—p. 416.
Feces in Sprue. D. A. K. Black, P. Fourman and P. Trinder.—p. 418.
World Health Organization. M. D. Mackenzie.—p. 428.

Homologous Serum Jaundice.—Spurling and her associates made a follow-up study of 2,040 patients transfused with pooled serum and/or plasma, of 1,284 patients transfused with whole blood only and of 1,284 control patients not transfused. The incidence of jaundice in the patients receiving pooled plasma or serum was 7.3 per cent. Frank homologous serum jaundice did not develop in any patient receiving whole blood. Jaundice did not develop among the controls within five months of transfusion. The character of the jaundice was with one exception mild. The symptomatology and incubation period were in accord with previous accounts. To minimize the risk of homologous serum jaundice after transfusion, (1) human serum for prophylactic purposes should not be pooled, (2) for transfusion purposes only small pools should be used, (3) all blood products issued should carry an identification number, (4) records should be kept of the number of the bottle given to a particular patient and (5) machinery should be maintained for the notification of jaundice following transfusion, thus enabling the withdrawal of icterogenic material from circulation.

Edinburgh Medical Journal

53:401-464 (Aug.) 1946

Sensitivity of Bacteria to Action of Penicillin. J. P. Duguid.—p. 401.
Wartime Advances in Medicine Which Might Be Translated Into Civil Practice. A. Biggam.—p. 413.
Problem of Bacterial Variability and Origin of Infectious Disease. W. M. Levinthal.—p. 429.
Rheumatic Encephalopathy. D. Leys.—p. 444.
Case of Blackwater Fever Observed in Britain. H. Dlugosz.—p. 450.

Indian Medical Gazette, Calcutta

81:225-280 (June-July) 1946. Partial Index

Surgery of Divided Digital Tendons. F. V. Stonham.—p. 225.
*Some Not Well Known Manifestations of Riboflavin Deficiency. C. Gopalan.—p. 227.
Analytical Study of Intestinal Protozoal Infection, with Special Reference to Amebiasis. R. N. Chaudhuri and M. N. Rai Chaudhuri.—p. 230.
Effect of Sulfadiazine and Penicillin on Experimental Animal Plague. J. C. Gupta, G. Panja and M. Chatterjee.—p. 234.
*One Thousand Cases of Bubonic Plague Treated in an Emergency Plague Hospital. A. T. W. Simeons and K. D. Chhatre.—p. 235.
Electron Microscope and Its Use in Biology. A. N. Sen.—p. 247.

Riboflavin Deficiency.—Gopalan found that genital symptoms of riboflavin deficiency occur chiefly during the childbearing age. Of 67 females who presented genital symptoms in association with other signs of riboflavin deficiency and in whom these symptoms cleared on the administration of riboflavin, 64 were adult women and 3 were children. The minimal genital manifestation of riboflavin deficiency in women is an increase in the normal vaginal secretion. The resulting leukorrhea is apparently the result of increased transudation through the vaginal walls. Pruritus vulvae is present in cases of profuse leukorrhea. The leukorrhea abates on treatment with riboflavin, and the pruritus and vulvitis also subside. Pruritus ani, perianal inflammation and anal fissure are among the signs of riboflavin deficiency. Treatment with 10 mg. of riboflavin daily by mouth for two to four weeks leads to rapid healing of the fissure and subsidence of other signs. Scaly dermatitis of the scrotum is frequent in subjects with riboflavin deficiency, but preputial ulceration is also observed. Both these conditions are seen much more often in men than in boys. Among 92 cases of riboflavin deficiency in men above 18 years, 59 showed scrotal dermatitis which was associated with ulceration of the preputial margin in 32 cases; 3 cases showed preputial ulceration without scrotal involvement. In several cases of riboflavin deficiency observed by the author, the angles of the lids showed ulceration. He designates this condition as angular blepharitis.

Bubonic Plague.—Simeons and Chhatre say that 1,039 persons with plague were admitted to an Emergency Plague Hospital from the end of July 1945 to the middle of January 1946. There were 19 with nonbubonic plague, all of whom died. Of the remaining 1,020 patients 20 were treated by various methods and with apparently insufficient sulfonamide doses before a fixed routine was established. There remained 1,000 consecutive patients with bubonic plague who received a carefully supervised treatment with sulfathiazole or sulfadiazine. Sulfathiazole was injected intramuscularly and sulfadiazine intravenously. When sulfathiazole was injected, sulfathiazole tablets were given by mouth; when sulfadiazine was injected, only sulfadiazine tablets were given in addition. Two injections (1 Gm. each in adults) were given daily and two tablets four hourly day and night. This was continued until the temperature stayed below 100 F. for at least eight hours; from then on only tablets were continued. Some patients had as many as nineteen injections. Liberal use was made of dextrose-saline infusions, nikethamide, digilanid, vitamin C, bromide and morphine. Attention was paid to an adequate fluid intake. Early treatment seems to be important. The mortality rate among patients treated within the first twenty-four hours is 6.61 per cent, whereas after twenty-four hours it rises to 19.67 per cent. In 1,000 patients the mortality was 18 per cent; excluding moribund patients the mortality was 8.48 per cent.

J. of Neurol., Neurosurg. and Psychiatry, London

9:41-80 (April) 1946. Partial Index

Familial Disease Characterized by Noncalcifying Corticomeningeal Diffuse Angiomatosis and Progressive Demyelinization of White Substance. P. Divry and L. van Bogaert.—p. 41.
Subarachnoid Dissemination of Spinal Tumors. J. E. A. O'Connell.—p. 55.
*Etiology and Pathogenesis of Acute Sporadic Disseminated Encephalomyelitis and Multiple Sclerosis. M. S. Margulis, V. D. Soloviev and A. K. Shubladze.—p. 63.

Disseminated Encephalomyelitis and Multiple Sclerosis.—Margulis and his co-workers isolated two strains of filtrable virus—from the blood of 1 patient and from the cerebral tissue of another with acute disseminated encephalomyelitis. These strains have proved to be identical and to differ from other known human neurotropic viruses. The syndrome of acute disseminated encephalomyelitis has been produced in animals by means of inoculation with this virus. The morphologic picture obtained has proved identical, particularly in rabbits and puppies, to that found in man with acute disseminated encephalomyelitis. An attempt has been made to neutralize the virus thus isolated with the serums of patients suffering from acute disseminated encephalomyelitis and multiple sclerosis. The virus has been neutralized by serums from 50 per cent of patients with multiple sclerosis and from 70 per cent of patients with disseminated encephalomyelitis. These positive neutralization tests suggest that acute disseminated encephalomyelitis and multiple sclerosis have the same cause in some patients, while in others the same anatomic and clinical syndromes may be elicited by other agents or possibly by the same agent but with a different antigenic structure. Specific vaccine therapy has yielded satisfactory results in a small number of patients with acute disseminated encephalomyelitis and multiple sclerosis. There has been clinical improvement with considerable increase of antibodies in the blood.

Lancet, London

2:293-332 (Aug. 31) 1946

Myth and Mumpsimus. J. R. Forbes.—p. 293.
Medical Photography: Review. P. Hansell.—p. 296.
Hospital Photographic Department. B. Stanford.—p. 299.
Anatomic Models in Teaching. R. de Seigneux.—p. 302.
Children Who Spend Too Long in Bed. J. A. McCluskie.—p. 302.

2:333-368 (Sept. 7) 1946

Epidemic Thrombophlebitis in East Africa Command. P. E. C. Manson-Bahr and A. D. Charters.—p. 333.
Nausea and Vomiting of Pregnancy: Study in Psychosomatic and Social Medicine. G. G. Robertson.—p. 336.
Calf Plasma or Serum for Transfusion. J. M. Massons.—p. 341.
*Typhoid Carriers Treated with Penicillin and Sulfathiazole. C. H. Comerford, H. Richmond and W. W. Kay.—p. 343.
*Pyridoxine (Vitamin B_6) in Epilepsy: Clinical Trial. J. T. Fox and Gladys M. Tullidge.—p. 345.
Primary Diphtheria of Conjunctiva: Report of 2 Cases. A. R. Miller and D. E. Blower.—p. 345.
Peritoneal Nodules of Unknown Etiology. H. Ibrahim.—p. 346.

Penicillin and Sulfathiazole for Typhoid Carriers.—Comerford and his associates employed both sulfathiazole and penicillin on 2 established carriers, both of whom regularly excreted Bacterium typhosum phage type D_1 in their feces, 1 of them even after cholecystectomy. An initial dose of 2 Gm. of sulfathiazole by mouth was followed by 1 Gm. at four hour intervals. Approximately 500,000 units of penicillin dissolved in 10 cc. of sterile water was given intramuscularly at the same time. The treatment was continued for eight and seven days respectively, the total doses of penicillin amounting to over 24 million and 21 million units. Bacteriologic examination of every stool after treatment failed to reveal the presence of Bact. typhosum in them for periods of over one hundred and thirty days in the 1 case and over one hundred and sixteen in the other. Two months after treatment both patients showed reduced agglutination titers to typhoid-Vi antigen.

Pyridoxine in Epilepsy.—Since it had been observed that pigs and rats deprived of pyridoxine developed typical epileptic fits, Fox and Tullidge decided to try medication with pyridoxine on 8 epileptic school boys, who were selected because of the regularity of their fits. Doses of 20 mg. or 100 mg. each day were tried for weeks, but there was no evidence of a decrease in fits in any of the patients. The authors conclude that it is unlikely that pyridoxine would be of value in epilepsy.

2:369-404 (Sept. 14) 1946

*Painful Feet in Prisoners of War in Far East: Review of 500 Cases. E. K. Cruickshank.—p. 369.
*Folic Acid in Treatment of Megaloblastic Anemia. L. S. P. Davidson and R. H. Girdwood.—p. 373.
Confusion of Ameboma with Carcinoma. M. J. Smyth.—p. 376.
Gout in Leukemia: Report of Case. L. M. Shorvon.—p. 378.
Tuberculous Abscess Following Intramuscular Penicillin: Report of Case. D. Ebrill and S. D. Elek.—p. 379.
Light Weight Oxygen Mask of Plastic Material. B. S. Kent.—p. 380.
Picrotoxin in Barbiturate Overdosage. T. N. Misir.—p. 381.

Painful Feet in Prisoners of War in the Far East.—According to Cruickshank the symptom known as painful feet, burning feet or happy feet appeared among prisoners of war in Changi Camp, Singapore, at the end of July 1942, five and a half months after capture. This report is based on 500 personally observed cases. A dull ache was usually the earliest abnormality and was felt below the heads of the metatarsals and in the balls of the toes. At first it was present only at night after a long day's standing or walking. Later the ache became more pronounced, coming on in the early morning and increasing when the patient retired to bed. Sharp stabbing pains became superimposed on the ache in 58.6 per cent of the 500 cases. A single pain lasted from half a second to two seconds, shooting, parallel to the toes and soles of the feet, into the heels, through the ankle joints and sometimes up the shins to the knees. In 6.4 per cent there were similar symptoms in the hands, but these usually developed only in long-standing cases four to eight weeks after the onset of symptoms in the feet. The symptom developed when the diet of the prisoners was deficient in protein and the vitamin B complex. Hypertension and exaggerated tendon reflexes were added features in some cases. The diet records and the beneficial effect of treatment with nikethamide (the diethylamide of nicotinic acid) point to a deficiency of nicotinic acid, perhaps in conjunction with riboflavin deficiency, as a major factor in the production of the syndrome.

Folic Acid in Treatment of Megaloblastic Anemia.—Davidson and Girdwood employed folic acid in the treatment of 9 patients with megaloblastic anemia. Of the 6 patients with addisonian pernicious anemia 4 were treated with folic acid daily by mouth in doses ranging from 5 to 20 mg.; 2 received a single large dose by the parenteral and oral route respectively. Of the patients receiving daily oral treatment, only the 1 who received 20 mg. daily had a reticulocyte response and red cell rise completely up to the standard demanded by the U. S. P. board. Two others, who received 10 mg. daily by mouth, showed suboptimal rises in reticulocytes. The patient who received 5 mg. daily had a rise in erythrocytes that conformed to the U. S. P. standard, but the reticulocyte rise was suboptimal. In all 6 cases the bone marrow was transformed from a megaloblastic to a normoblastic state. The clinical state of the patients improved coincidentally with the blood. A patient who was given 200 mg. of folic acid intramuscularly in the first day of treatment showed a sharp rise of reticulocytes and an increase of more than 1 million red cells and 20 per cent hemoglobin in eleven days. In the sixth patient an excellent response resulted from a single dose of 400 mg. orally. If such a response can be obtained regularly, the simplest and most effective method of treatment may prove to be an initial large dose followed at weekly or fortnightly intervals by doses of 50 to 100 mg. Three patients with megaloblastic anemia which had been refractory to "anahaemin" responded to folic acid, which was, however, unable to restore the blood to normal. Since 2 of these patients had previously responded to proteolyzed liver, it is suggested that folic acid might be the active principle of proteolized liver.

Medical Journal of Australia, Sydney

2:181-216 (Aug. 10) 1946

Seasonal Variations in Ascorbic Acid Content of Australian Diet. M. Honey.—p. 183.
Basis of Postoperative Treatment in Appendicitis and Peritonitis: Folklore or Physiology? V. J. Kinsella.—p. 190.
*Use of Gamma Globulin in Prophylaxis of Measles. S. G. Anderson and W. M. Ket.—p. 196.
Insertion of Transfusion Needle Made Easy. T. A. Merton.—p. 197.

Gamma Globulin in Prophylaxis of Measles.—Anderson and Ket report that during an epidemic of measles in Melbourne 116 children who were closely exposed to infection were given gamma globulin prophylactically. About half of the children received 0.1 cc. of gamma globulin per pound of body weight; most of the others received 0.025 cc. per pound of weight. Sixty-seven of the children did not develop measles, 46 had a modified attack and in 3 the course of the disease was apparently uninfluenced by globulin. Of those who had received the larger dose, more than three fourths remained free from measles, whereas of those receiving the smaller dose more than half developed a modified attack but there were no complications. The 3 patients in whom the course of the disease was apparently uninfluenced had received the smallest prophylactic dose.

Transactions Royal Soc. Trop. Med. & Hyg., London

40:1-102 (Aug.) 1946

Distribution of Immunity to Yellow Fever in Central and East Africa. A. F. Mahaffy, K. C. Smithburn and T. P. Hughes.—p. 57.
Incidence of Sicklemia in West Africa. G. M. Findlay, W. M. Robertson and F. J. Zacharias.—p. 83.
*Cooley's Anemia: Notes on 6 Adult Cases. A. L. Fawdry.—p. 87.
Penicillin in Treatment of Experimental Relapsing Fever in Rats. E. S. Anderson.—p. 93.
Collapse of Lung and Porocephalosis. F. E. Stock.—p. 101.

Cooley's Anemia.—Fawdry says that the laboratory test which most strikingly shows the presence of Cooley's anemia is the plotting of the fragility curve. The harboring of the trait is of no consequence to the individual, though it may be to his offspring, so he usually survives unrecognized to adult age. The author reports 6 cases that represent the intermediate group which reaches and passes puberty but yet may be seriously incapacitated. All 6 patients showed splenomegaly, hypochromic erythrocytes and increased resistance of the cells to hemolysis by hypotonic saline solution. One patient showed a great increase of normoblasts in the marrow. Two were typical of the mildest degree of the affliction: the first had no symptoms directly referable to his blood dyscrasia and the second only the icterus of the conjunctivas and a large spleen. As they do not have anemia, there has been no interference with their physical capabilities. Except possibly for lifelong repeated transfusions, which is scarcely practicable in Cyprus, there is as yet no therapy whereby the anemic patient can be restored to health and usefulness in the community. The milder form of the disorder is fairly frequent throughout the island.

Lyon Chirurgical, Paris

41:129-256 (March-April) 1946

Regeneration and Reconstitution of Dissected Nerves. A. Weber.—p. 129.

Postoperative Aspect of Peptic Ulcer: Sixty-Two Personal Observations. P. Santy, R. Chattot and J. Clert.—p. 138.

Extensive Embolism of Pulmonary Artery. R. Leriche.—p. 143.

*Prevention of Hemorrhagic Complications in Biliary Tract Surgery with Vitamin K. P. Mallet-Guy, R. Jeanjean and J. Ronchet.—p. 160.

*Two Recent Observations of Gangrene of Extremities of Venous Origin. R. Fontaine and E. Forster.—p. 173.

Adenocarcinomas of Cervix Uteri: Discussion of Choice of Therapeutic Indications. M. Dargent and R. Bonniot.—p. 180.

Exeresis in Treatment of Inveterate Suppuration of Parenchyma of Lungs. V. Aubert.—p. 188.

Toxic Diffuse Goiter and Myopathy. R. Peycelon.—p. 196.

Vitamin K and Biliary Tract Surgery.—Mallet-Guy and his associates employed prophylactic vitamin K treatment in 225 cases of biliary tract surgery. Only 63 patients had a normal prothrombin level, while 162 patients had a prothrombin deficiency. Preoperative determination of the prothrombin level is advisable in all cases of chronic icterus and in cases with a history of jaundice or of previous involvement of the common bile duct in the absence of chronic icterus. There was not a single death from a postoperative hemorrhage in a three year period during which biliary tract patients with hemorrhagic diathesis were treated with oral administration of 200,000 international units for twenty-four hours combined with a subcutaneous injection of 10 mg. of vitamin K when the prothrombin deficiency amounted to 20 per cent of the normal level or where the urgency of the surgical intervention required a rapid improvement of the prothrombin level. This treatment should be continued for two to three days prior to intervention. In cases in which the prothrombin level oscillates around 75 per cent of the normal, 150,000 units should be given by mouth for four to six days. In cases of icterus this treatment should be combined with oral administration of 1 Gm. of biliary extract for every 150,000 vitamin K units. Continuation of the satisfactory effect is ensured by a maintenance treatment with a twenty-four hour dose of 100,000 to 150,000 units for several days after the intervention.

Gangrene of Venous Origin.—Fontaine and Forster report 2 cases of venous gangrene. A man aged 40 presented a thrombophlebitis of both lower extremities after a hemorrhoidectomy. After several weeks extensive skin gangrene involving the anterior aspect of the right leg and foot had separated, and grafting of the granulating surface of the wound became possible. Mummification of four toes of the left foot occurred. Residual edema and loss of the toes was a much better result than could have been expected. It shows that venous gangrene, although associated with a massive slough, may be limited to the skin. A boy aged 8 years fell on his arm, an erroneous diagnosis of fracture of the elbow was made and a plaster cast was applied. Moist gangrene of the hand and the inferior third of the left forearm occurred within a few days. X-ray examination revealed the absence of any fracture. Amputation became imperative because of the severe massive gangrene. Microscopic examination of the amputated extremity showed thrombosis of all the veins, while the arteries were normal. Rich collateral venous circulation is responsible for the fact that venous gangrene occurs only after extensive obliteration of the veins. Poor general condition or associated arterial spasm can favor the occurrence of venous gangrene but is not indispensable to it. Anoxemia resulting from venous stasis due to deficient collateral circulation is responsible for the occurrence of venous gangrene.

Progrès Médical, Paris

74:305-336 (July 24) 1946

Penicillin and Anaerobic Microbes. A. Lemierre.—p. 307.

Microbic Antagonism in General and with Particular Reference to Antibiotic and Antidote Properties of Culture Filtrates of B. Subtilis and of Penicillium Notatum Concerning Certain Pathogenic Bacteria and Microbic Toxins: Practical and Theoretical Consequences. G. Ramon and R. Richou.—p. 309.

*Therapeutic Value of Procaine Hydrochloride Infiltration of Lumbar Sympathetic Ganglions in Arteritis. P. Wertheimer, P. Frieh and R. Gautier.—p. 319.

Procaine Infiltration of Lumbar Sympathetic Ganglions in Arteritis.—Wertheimer and his associates infiltrated the lumbar sympathetic ganglions with procaine hydrochloride as the only method of treatment in 38 cases of arteritis with calcareous infiltration in persons whose average age was 65 years. Ischemic gangrene supervened in 12 of the cases. Good results were obtained in 22 cases, stabilization took place in 4 cases, amputation was performed in 8 cases and death occurred in 4 cases. Good results were obtained in 7 of the cases with gangrene, rapid death occurred in 2 and amputation became imperative in 3, with death in 1 of them. The periods of observation varied from six to nine years in 10 cases, from three to four years in 4 cases and from one to two years in 11 cases. Amputation need not be considered as absolute failure of treatment, since in 3 cases a temporary improvement lasting for six months to three years was obtained prior to amputation. In the majority of the cases repeated infiltrations of lumbar sympathetic ganglions were required. The good results, particularly those in cases of gangrene, suggest that in the long run repeated procaine hydrochloride infiltrations of lumbar sympathetic ganglions may have the same effect as sympathectomy, but this hypothesis requires further control.

Gynaecologia, Basel

121:225-340 (May-June) 1946

Effect of Demerol on Delivery. F. de Senarclens.—p. 225.

Effect of Spasmolytics on Period of Dilatation During Birth (Investigation of the New Spasmolytic "Hexacompal"). H. Sauter.—p. 247.

*Necrosis of Renal Cortex and of Anterior Lobe of Hypophysis During Pregnancy: Contribution to Morphology of Eclampsia. W. Hügin.—p. 269.

*Presence in Human Sperm of a Ferment (Hyaluronidase) Which Splits Mucin: Contribution to Problem of Disturbances in Male Fertility. E. Eichenberger.—p. 288.

Dermoid Cyst with Cancerous Degeneration of Thyroid Tissue. J. H. Müller.—p. 330.

Necrosis of Renal Cortex and of Anterior Pituitary During Pregnancy.—Hügin reviews the histories of 2 pregnant women who developed severe eclampsia with anuria and intrauterine death of the fetus. Both women died and necropsy revealed the hitherto unknown combination of necrosis of the renal cortex and of the anterior lobe of the hypophysis. The microscopic changes are described and evaluated. These changes and reports in the literature indicate that the disorder in question represents a toxic disturbance of pregnancy in which there may occur severe changes in the tubular and vascular portions of the kidney, with total infarction of the renal cortex and necrosis of the anterior pituitary, and both organs usually show extensive vascular thrombosis. The tissue changes are mainly degenerative in nature; inflammatory changes occur less frequently.

Mucin Splitting Ferment in Human Sperm.—Eichenberger studied 76 sperm specimens from 53 men, the majority of whom had proved sterile over more than two years of marriage and requested examination on this account. The author found in normal human semen a ferment having qualities identical with those of hyaluronidase. There is usually a parallelism between the number of spermatozoa and the hyaluronidase contents of the sperm. Semen which does not contain spermatozoa shows no hyaluronidase activity. Spermatogenesis and production of hyaluronidase must be considered as two processes which condition each other reciprocally and are inseparable. The fermentative insemination theory explains the rapid decrease of fertility in males whose semen contains less than 60 million spermatozoa per cubic centimeter of semen.

Schweizerische Zeitschrift fur Tuberkulose, Basel

3:69-164 (No 2) 1946

Aschoff Klinge Node in Myocardium of Patients with Tuberculosis of Lungs H de Courten —p 69
*New Investigations on Besnier Boeck Schaumann Disease (Epitheloid Cellular Granulomatosis) S J Leitner —p 108
Clinical Features of Tuberculosis in Children J Rutishauser Scharpf —p 134
Pseudolithiasic Type of Tuberculosis of Kidneys (Tuffier) R Allemann —p 149

Besnier-Boeck-Schaumann Disease—Leitner reports 8 cases of Boeck's disease in 5 male patients between the ages of 9 and 54 years and in 3 women between the ages of 25 and 43 years The tuberculous etiology of Boeck's disease is strongly suggested by the transition from benign granulomatosis to tuberculosis in 3 of these cases, by the simultaneous occurrence of osteitis tuberculosa multiplex cystoides and of tuberculosis in the bones in 1 case, and by the tuberculin test changing from negative to positive in 4 cases The similarity of the clinical symptoms and of the course of benign granulomatosis in a brother and sister suggests that the constitution plays an important part in the course of Boeck's disease The tuberculin test was slightly positive in the sister and negative in the brother In 1 case benign granulomatosis occurred after a primary infection The microscopic picture of this case with its small caseous masses suggests that the transition from the allergic condition of the primary infection to that of the benign granulomatosis was not yet terminated and that the caseous masses depended on the allergy which preceded Boeck's disease The concept of Boeck's disease as a specific type of tuberculosis explains the fatal course in 2 of the author's cases The tuberculin reaction is to be considered as an antigen antibody reaction The negative tuberculin test in benign granulomatosis may be the result of the fixation of the antibodies at the site of their production (the reticuloendothelial system) by the antigens of the Koch bacillus which are destroyed at the same site The reticuloendothelial system is to be considered as the central factor in the defense mechanism, an immunity such as can be produced in animals or human subjects by desensitization, but not an anergy, may be observed in benign granulomatosis with its productive reticuloendothelial system reaction A real anergy may be observed in acute tuberculous septicemia characterized by nonspecific necrosis, abundant bacilli and a very rapid malignant course The absence of tissue defense in the reticuloendothelial system may be responsible for the negative tuberculin test Benign granulomatosis differs from generalized caseous tuberculosis of the lymphatic system, which in spite of the same localization is characterized by a generalized and uniform caseous process and by its malignant course

Revista Médica de Chile, Santiago

72:377 444 (June) 1946

Sulfanilamide Therapy in Hepatobiliary Infections R Armas Cruz, G Lira and A Spencer —p 377
Cancer of Gallbladder R Vargas Molinare and A Larach N —p 384
Myelosclerosis Present Aspects of Diagnosis, Treatment A Nijamkin, R Etcheverry, P Garcia Palazuelos P Fernandez and R Barahona —p 387
*Methyl Testosterone and Addison s Disease A Atria R L Vargas F and Renato Sanz del Fierro —p 394
Treatment of Nontuberculous Acute Pleural Empyema with Intrapleural Penicillin G Sepulveda D —p 397
Horseshoe Kidney R Vargas Zalazar —p 402

Methyl Testosterone and Addison's Disease—In studying the action of testosterone on uterine fibromyoma Atria and his co workers found that the subcutaneous implantation of tablets of methyl testosterone exerted a noticeable influence on the pulse and the arterial pressure whereas testosterone propionate did not have the same effect Because of this observation the authors decided to try implantation of methyl testosterone in cases of adrenal insufficiency In a man aged 37 and a woman aged 40 subcutaneous implantation of methyl testosterone corrected the subjective disturbances and the main clinical signs of chronic adrenal insufficiency In the first patient 120 mg of methyl testosterone was implanted into the gluteal region and in the second patient 100 mg Seventy days after the implantation the first patient was still in a favorable condition The authors stress the prolonged effect in relation to the low dose The low dosage has the advantage that it eliminates the excessive dosage of desoxycorticosterone and the masculinization in female patients

Wiener medizinische Wochenschrift, Vienna

96:281-304 (Aug 1) 1946

Static Disorders of Lower Extremity A Saxl —p 281
*Investigation on Gonadotropic Neurosecretion K Richter and Sybille Schuler —p 284
*Administration of Eupaverin in Surgical Intervention for Arterial Embolism O Bruckschwaiger —p 286
Disturbance of Permeability of Erythrocytes to Rhodan Salts in Soldier with War Nephritis E Fieber, W Pilgerstorfer and D Roller —p 288
Case of Mastoiditis Causing Recurrent Pneumonia and Dyspepsia with Atrophy in Infant P Krepler —p 291

Gonadotropic Neurosecretion — Increasing amounts of anterior lobe of the pituitary, of diencephalon and of uncus substance of dogs were implanted into infantile albino rats by Richter and Schuler Occasionally guinea pigs and rats were used as donors In addition to the microscopic criteria of the gonadotropic effect of these substances on the infantile rat ovary the weight of the ovaries and uteri of the animals experimented on was ascertained, adding an objective measure of the intensity of the gonadotropic reaction elicited by the implantation The increase in weight of the ovaries and of the uteri paralleled the weight of the implanted amount of the anterior pituitary lobe substance The weight of the ovaries and of the uteri of the rats varied between the upper and lower normal limit when increased amounts of diencephalon and uncus substance were implanted A gonadotropic reaction thus resulted only from the anterior pituitary lobe implants and not from those of the diencephalon or uncus substances The tuber cinereum, therefore, cannot be considered as the site of production of gonadotropic hormones Destruction of the gonads and disturbances of the sexual impulses resulting from electrocoagulation of the tuber cinereum suggest that the tractus supraopticohypophyseos but not a "nervous center' has been destroyed The tractus supraopticohypophyseos is to be considered the route by which the nervous impulses which are continuously needed for its support and regulation are conveyed to the pituitary It may be that the chemical process occurring in the terminal branches of the tractus supraopticohypophyseos is similar to that which occurs in the transmission of stimuli to vegetative and motor nerves

Eupaverin in Arterial Embolism—A case of bilateral embolism of the axillary artery in an adipose woman aged 77 is reported by Bruckschwaiger The emboli were removed under local anesthesia and the arteries were sutured Immediately afterward a narrowing of the vessels was observed at the suture site and peripherally, the vessels were pulseless An injection of 0 06 Gm of methylene dioxy benzyl methyl-methylene dioxyisoquinoline (eupaverin) in 2 cc was made into the artery above the suture site The width of the artery was restored to normal within a few seconds and the pulse in the radial artery became definitely palpable The patient complained about unpleasant formication and "awakening' of the hand The livid color of the skin turned to a healthy red The extremity became warm and sensory perception was restored Normal function of both upper extremities resulted four weeks after the surgical intervention Early surgical treatment of arterial embolism combined with administration of eupaverin may prevent failure of embolectomy, while conservative treatment of embolism of the iliac femoral and axillary arteries with eupaverin may be harmful The spasmolytic effect of the drug may cause the embolus to migrate to another site where its surgical removal would be more difficult Consultation of the internist with the surgeon prior to the administration of eupaverin is *imperative* in all cases of arterial embolism and particularly in circulatory disturbances of the extremities associated with typhus

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

90:719 758 (June 29) 1946

*Endocrine Disturbance with Manifestations of Nontropical Sprue and of Addison's Disease A L de Groot —p 720
Significance of Smooth Muscle Tissue in Aorta in Connection with Ruptures in Media A A van der Kroon —p 725
*Treatment of Bronchial Asthma with Small Doses of Copper F W Klaarenbeck —p 730
Treatment of Camp Eyes (Deficiency Amblyopia) J G van Manen —p 733
Amenorrhea in Women's Camp at Tangerang C M Hart Meerloo and A Scheltema Joustra —p 736
Early Stage of Gastric Cancer J A Arendsen Hein —p 739
Treatment of Injuries in Region of Finger Nail B Veraart —p 743

Nontropical Sprue Combined with Addison's Disease.—A man aged 52 complained of loss of weight, fatigue, painful tongue, dry mouth and thin foamy stools of light color The sense of smell was reduced and coughing brought up mucus The hands and feet were cold and the feet were swollen Years before the patient had had joint disorders and had been treated with gold preparations After that symptoms appeared which were similar to those he had now In the differential diagnosis the disease of Besnier-Boeck and tuberculosis were considered but ruled out Many symptoms indicated nontropical sprue, but there were also some, particularly the diffuse pigmentation of the skin and mucous membranes and hypotension, which suggested Addison s disease A combination of these two diseases was accepted While it has been established that Addison's disease is the result of a disorder of the adrenal cortex, it has been suggested by Verzar that this is true also of nontropical sprue As a corroboration of this opinion de Groot found that many symptoms of sprue improved noticeably under treatment with a preparation of the adrenal cortex

Copper in Treatment of Bronchial Asthma—Klaarenbeek obtained favorable results with a copper preparation in patients with bronchial asthma Best results were obtained in patients up to 20 years of age He reports 7 additional cases of bronchial asthma in which the copper preparation was used All of these patients were less than 26 years of age The copper preparation had been used by others in polyarthritis and certain forms of tuberculosis It produces favorable results in young asthma patients The dosage must be adjusted for the individual patients According to the usual scheme two injections of 10 and 25 mg respectively are given during the first week One injection of 50 mg is given weekly during the following four weeks If the attacks cease, 100 mg can be given every other week, but if this is not the case 100 mg or more should be given every week until the attacks stop The effective dose can be given for four weeks, and after that the aim should be to prolong the interval by one week after four injections One or two injections per month will usually suffice

90:759-798 (July 6) 1946 Partial Index

*Behavior of Blood Pressure During Periods of Starvation and Recovery (September 1944 to September 1945) S Lups and C Francke —p 764
Spinal Conditional Reflexes J Ten Cate —p 769
*Experiences in Treatment of Acute Bacillary Dysentery W J J Molenkamp —p 771
Treatment of Lupus of Palate B J Rienks —p 775

Blood Pressure During Starvation and Recovery.—During the period of starvation, when loss of weight was observed in the majority of persons, Lups and Francke studied the relationship between the state of nutrition and the behavior of the blood pressure They found that in April 1945, during the period of severest hunger, the systolic as well as the diastolic blood pressures were definitely lowered In September 1945, when 80 per cent of the people examined had increased in weight considerably, the blood pressure had increased in 77 per cent of those with hypotension in 47 per cent of those with normal pressure and in 25 per cent of those with hypertension The authors think that the low rations particularly the shortage of proteins, were responsible for the lowering of the blood pressure readings

Treatment of Acute Bacillary Dysentery.—The observations reported by Molenkamp were made in a Japanese internment camp He describes the pathologic changes taking place in the intestine, differentiating 3 stages (1) the catarrhal stage, (2) the stage of crust formation and (3) the stage of cicatrization In the treatment, rest is of great importance for the intestine Dietetic measures were employed and in addition the combined administration of sulfaguanidine (5 times 1 5 Gm) and tincture of opium (5 times 15 drops) for five days When the patient suffered from constipation the opium was omitted When necessary this treatment was repeated after several days The treatment proved effective in acute, mild and moderately severe cases

Vrachebnoe Delo, Kharkov

No 6, 290-379, 1946 Partial Index

Peculiarities of Phagocytosis in Various Infectious Diseases V K Stephanskiy —p 290
Possible Significance of Bacterial Allergen in Septic Scarlet S M Minervin, S M Fridman and T M Rozengart —p 293
Blood Bacteriology in Wound Sepsis G M Frenkel —p 295
*Insulin Therapy of Ulcerative Disease M A Yasinovskiy —p 310
*Question of Formation of Renal Stones After Injury to Long Bones A P Tsulukidze —p 343

Insulin Therapy of Ulcerative Disease.—In treating 98 patients with gastroduodenal ulcer, Yasinovskiy administered insulin to 98, insulin and atropine to 69 and atropine alone to 37 Patients in the insulin group received 10 units of insulin twice daily, before breakfast and before dinner All the patients received the usual bland ulcer diet plus 50 Gm of sugar daily The diet was adequate in calories and vitamins Significant improvement was noted in 85 of the insulin group of 98, in 9 very little change was noted and in 4 there was exacerbation of the symptoms Improvement therefore took place in 86 7 per cent Of the 37 patients treated with atropine 35 showed definite improvement In the group receiving combined insulin-atropine treatment, considerable improvement was accomplished in practically all cases The duration of improvement in the insulin group lasted from three to twelve months As a rule recurrence was brought about by dietetic errors The insulin treated group and the atropine treated group presented a striking difference in the acidity of the gastric contents The atropine group contained 60 per cent of patients with hyperacidity at the beginning of the treatment On the completion of the treatment the group did not contain any instance of hyperacidity In the insulin treated group the number of cases with hyperacidity not only did not diminish but increased from 47 per cent to 50 per cent The group of patients treated with insulin and atropine occupied a median position with the number of cases with hyperacidity reduced from 64 per cent to 28 per cent The results obtained with insulin therapy of ulcerative disease suggest that there is no definite parallelism between the clinical course of peptic ulcer and acidity of the gastric contents The effect of insulin cannot be explained alone by its action as an alkalizing factor and by its action on the vegetative nervous system The author believes that its effect is also due to its action on a functionally inadequate liver and pancreas Insulin therapy of ulcer is particularly indicated in cases of hypochlorhydria in the presence of advanced emaciation associated with involvement of the pancreas and the liver

Renal Stones After Long Bone Injury.—Tsulukidze states that, of 45 combat men admitted to his clinic because of renal stones, 8 gave a history of gunshot wounds Four of these had gunshot wounds of the thigh and leg Analysis of 184 postmortems of men with trauma of the bones of the lower extremity revealed the presence of renal stones in 5, 4 sustained a fracture of the thigh and 1 a gunshot fracture of both legs Pathologists not infrequently record the presence of sand in the kidneys in subjects with bone injury, particularly of bones of the lower extremity The role of bone injury in the formation of renal stones, according to a majority of authors, is due to an increase in the blood calcium and to infection The author believes that fat embolism associated with fractures is another factor Among other conditions favoring renal calculosis is the passive state of the patient and the diet The passive state of the patient favors alteration in the blood circulation in the kidney and urinary stasis Fat embolus lodged in the kidney can constitute an organic nucleus for deposition of salts The fat embolism may also produce an infarct which will act as a nucleus for a stone A septic embolus may be transferred to the kidney when a fracture of the bones of the lower extremity is complicated by thrombophlebitis

Book Notices

Surgical Treatment of the Nervous System. Supervising Editor: Frederic W. Bancroft, A.B., M.D., F.A.C.S., Associate Clinical Professor of Surgery, Columbia University, New York. Associate Editor: Cobb Pilcher, M.D., F.A.C.S., Associate Professor of Surgery, Vanderbilt University School of Medicine, Nashville, Tennessee. Cranial and Intracranial Surgery, Tumors, Epilepsy and Cranial Nerve Disorders, Spinal Cord, Autonomic Nervous System, Peripheral Nerves. Fabrikoid. Price, $18. Pp. 534, with 298 illustrations. Philadelphia, London & Montreal: J. B. Lippincott Company, 1946.

The editors of this excellent textbook have organized the efforts of neurosurgical authorities from various centers in the United States. The result is an exceedingly useful volume dealing with the many and highly diversified problems of surgery of the brain, the spinal cord and the peripheral and autonomic nervous systems. Each author presents all the known facts relating to the pathology, diagnosis and treatment of his subject. The chapters are interestingly written and easily assimilated, especially since there is little similarity between the literary styles of the various contributors. In the words of the editors, "a healthy diversification of opinion on neurosurgical problems as a whole" is obvious and is gratifying to the critical reader. The entire field of clinical neurologic surgery is covered in this fine work, including a chapter on chemotherapy. In the rapidly growing field of neurologic surgery there has been an urgent need for a thorough and authoritative textbook covering all the problems encountered in this specialty. Several previous textbooks have been excellent but are now outdistanced by the rapid developments in neurosurgery stimulated by the war. This single volume presents a comprehensive, authoritative and modern view of clinical neurosurgery. It should be a standard textbook for medical students and deserves to be read by every neurologic surgeon and by every other surgeon whose endeavors bring him into contact with the central, peripheral or autonomic nervous system.

Environmental Warmth and Its Measurement: A Book of Reference Prepared for the Royal Naval Personnel Research Committee of the Medical Research Council. By T. Bedford. Medical Research Council, War Memorandum No. 17. Paper. Price, 9d., 25 cents; Including Supplement, 2s. 3d., 45 cents. Pp. 40, with 10 illustrations. London: His Majesty's Stationery Office, 1946.

This small and timely booklet sets forth in nontechnical language descriptions of the various instruments used in measuring environmental warmth—both radiant and kinetic—and the methods of evaluating the significance of their readings. The recent years of prolonged naval action in tropical waters brought a keen appreciation of the debilitating and efficiency lowering effects of hot environments on exposed personnel. Radiant and so-called wild heat became very important in combat vessels during periods of action or alert, presenting acute problems in personnel welfare and efficiency. Recognition of these problems and the need for their solution led to the preparation of this booklet as a first step in the collection of needed facts. The U. S. Navy already is air conditioning its newly constructed combat ships, and the beneficial results in improved health and efficiency of the ships' personnel are already obvious. Since workers in the medical sciences rarely have a clear appreciation of what radiant heat means in man's heat loss problem, this booklet is heartily to be recommended for their perusal. It is intended primarily as a working guide for those directly engaged in solving the Royal Navy's heat problems aboard ship.

Les tumeurs et les polypes du cœur: Etude anatomo-clinique. Par le D^{r} Ivan Mahaim. Préface du Professeur Dr. Jean-Louis Nicod. Monographie de l'Institut d'anatomie pathologique de l'Université de Lausanne. Paper. Pp. 568, with 67 illustrations. Paris: Masson & C^{ie}; Lausanne: F. Roth & C^{ie}, 1945.

The various tumors of the heart and their clinical manifestations are described. The book is divided into sections according to the location of the tumors. Thus, two hundred pages are devoted to "polyps" of the heart. Polyps are defined as tumors bulging into cardiac chambers, be they rhabdomyomas, lipomas, fibromas, myxomas or myxomatous thrombi. A serious criticism of the terminology of this book is that the differentiation between organized thrombi and myxomas is not clear: thus, a number of the tumors described are mural thrombi. Another unfortunate feature of the book is the lack of microscopic studies in some important cases.

Numerous observations illustrate the symptomatology and the various mechanical accidents caused by these "polyps." The accidents are classified into three types: (*a*) arterial embolism, (*b*) obliteration of a cardiac chamber, (*c*) occlusion of a cardiac orifice (tricuspid, mitral). Illustrating the first type, a case with embolism into the middle cerebral arteries is reported. The emboli were composed of "myxomatous appearing" connective tissue rich in blood vessels and histiocytes loaded with hemosiderin. The original "polyp" was found in the right auricle and was not examined microscopically but was classified, nevertheless, as a "myxomatous polyp." Emphasis is placed on the microscopic examination of the emboli because they represent biopsies of "cardiac polyps." Cardiac polyps are not inaccessible to surgery when they are benign. In some cases the "polyps" were primary spindle cell sarcomas or metastases from primary carcinomas of the kidneys or of the organs of reproduction.

In the second part of the book are described the benign "nonpolypoid" tumors of the heart. The hemangioblastoma and the benign mesothelioma belong to this group. The benign mesothelioma is a rare tumor, usually located in the septum near the Tawara node. It is believed to arise from epicardial inclusions in the septum. The symptomatology of this tumor is illustrated by carefully studied cases.

The malignant tumors of the myocardium are considered in the third part. They are classified as primary and secondary. Numerous histologic varieties of primary sarcoma of the myocardium are described. The relationship of the heart to the main bronchi and to the esophagus is reviewed. Metastases of primary extracardiac tumors reach the heart by direct extension or by the blood stream. An electrocardiographic examination should be made in every case of suspected cancer in order to detect myocardial involvement. The modification of the T wave does not have the characteristic evolution observed in myocardial lesions due to coronary sclerosis.

In the fourth part tumors of the pericardium are considered. Among the benign tumors, fibroma, lipoma, leiomyoma, lymphangioma and dermoid cysts are described. The malignant tumors of the pericardium (primary or metastatic) are associated with pericardial effusion (hemopericardium). Their symptomatology is reviewed and emphasis is placed on the x-ray picture and fluoroscopic examination.

The author believes that tumors of the heart are not rare and, if the internist looks for them as the neurologist looks for tumors of the brain, they will cease to be a pathologic curiosity.

Electrocardiography Including an Atlas of Electrocardiograms. By Louis N. Katz, A.B., M.A., M.D., Director of Cardiovascular Research, Michael Reese Hospital, Chicago. *Second edition.* Cloth. Price, $12. Pp. 883, with 525 illustrations. Philadelphia: Lea & Febiger, 1946.

The preface states that this edition has been expanded 50 per cent over the first, accomplished largely through the addition of more illustrations, summary tables, and a discussion of lead CF_5. But some of the length is attributable to a verbose and repetitious style which if corrected would not only shorten the book but make it more readable. The numerous illustrations, which are excellently reproduced, could be fewer in number, for many are examples of abnormalities adequately demonstrated in one or two illustrations rather than in six or seven, as is frequently done. The legends are too long and too detailed, and the main point to be emphasized is often thus obscured. References are numerous and up to date, but they are simply listed at the end of each section and not referred to in the text. There are an inordinately large number of typographical errors, considering that this is a second edition.

In the opening paragraph of section I there is a statement that "electrocardiographs are sensitive recording voltmeters." The string galvanometer is an ammeter. A little further on overshooting is ascribed to underdamping. Actually it is caused by the skin acting as a condenser with a by-pass resistance. These errors are typical of several others of an electrical and physiologic nature which occur in this section.

Section II, among other things, contains a description of electrocardiograms which bear such names as coronary pattern, heart strain pattern, digitalis pattern and rheumatic mitral pattern. There is also an axis shift pattern, the assumption being that with a certain contour of the electrical record one may say that the apex of the heart has been rotated upward and to the left (left axis shift) or downward and to the right (right axis shift). For this particular pattern this is oversimplification, for the record obtained will depend not only on rotation of the heart about its anteroposterior axis but also on rotation about its longitudinal and transverse axes and on local alterations in conduction and depolarization as well as on other factors. But the nomenclature the author uses to describe all these patterns has considerable significance other than from the point of view of electrocardiographic theory. By giving anatomic names to physiologic phenomena he has made a great appeal to the physician who welcomes this tenuous short cut to the cause of electrocardiographic abnormalities. It makes clinical electrocardiography easy, and he can disregard such "difficult" concepts as the electrical axis and the ventricular gradient. Incidentally the author also disregards these in his book after giving an erroneous definition of the latter. In short, the book gives impetus to an inaccurate and most deceptive practice—the making of anatomic and physiodynamic diagnoses from a purely electrophysiologic method.

That this is unsound the author paradoxically admits in numerous places throughout the book. Further, he emphasizes many times the lack of correlation between the electrocardiographic and the anatomic. For example, on page 393 he lists no less than twenty clinical entities which give a "coronary-like contour."

An otherwise good section on arrhythmias (III) is marred by inclusion of their clinical management. Treatment does not belong in a book titled "Electrocardiography." Further, the subject matter, particularly on the treatment of auricular fibrillation, contains some statements recommending the use of quinidine when emboli are occurring, and favoring rapid digitalization in myocardial infarction, to which most experienced clinicians would probably take vehement exception.

The beginner will find the length and wordiness of the volume a real obstacle to complete assimilation; the electrocardiographer will find the illustrations useful for reference and teaching but the text confusing because it is often contrary to what he has read elsewhere; the expert will find much with which he will disagree.

Pneumoperitoneum Treatment. By Andrew Ladislaus Banyai, M.D., F.A.C.P., F.C.C.P., Associated Clinical Professor of Medicine, Marquette University Medical School, Milwaukee, Wisconsin. Cloth. Price, $6.50. Pp. 376, with 74 illustrations. St. Louis: C. V. Mosby Company, 1946.

This monograph is a complete presentation of the subject of pneumoperitoneum. The material has been prepared with great care and is clearly and concisely presented. In the chapter devoted to historical review it is pointed out that the idea of pneumoperitoneum was conceived in 1872, when a laparotomy for another purpose revealed the presence of tuberculous peritonitis from which the patient subsequently completely recovered. For some time thereafter laparotomy became the standard treatment for tuberculous peritonitis. Although the exact mechanism of the therapeutic action was not understood, several theories were advanced. The idea of introducing oxygen or air through a needle into the peritoneal cavity was later conceived and has since been used to a considerable extent. In the chapter on the technic of pneumoperitoneum every step is presented in detail. The complications of this procedure are presented, such as air embolisms, accidental pneumothorax, mediastinal emphysema and scrotal pneumocele. Several chapters are devoted to the therapeutic application of pneumoperitoneum in such conditions as tuberculous peritonitis, tuberculous enterocolitis, pulmonary tuberculosis, bronchial asthma, bronchiectasis, pulmonary emphysema and pulmonary hemorrhage of nontuberculous origin. The author has had a large experience with this form of treatment and he presents the advantages, disadvantages and ultimate results so free from bias as to give the reader extreme confidence in his work. Seventy-four well chosen illustrations and approximately five hundred references are included. This book contains a great deal of information concerning pneumoperitoneum which has never before been assembled in one volume. It can be highly recommended to all physicians.

Clinical Laboratory Diagnosis. By Samuel A. Levinson, M.S., M.D., Ph.D., Director of Laboratories, Research and Educational Hospitals, Chicago, and Robert P. MacFate, Ch.E., M.S., Ph.D., Assistant Director of Laboratories, Research and Educational Hospitals, Chicago. Third edition. Cloth. Price, $10. Pp. 971, with 207 illustrations. Philadelphia: Lea & Febiger, 1946.

This is a complete handbook, including chapters on skin tests, pediatric procedure, tropical medicine, legal medicine and toxicology, histologic technic and such recently developed procedures as penicillin assay and kidney clearance tests with inulin and diodrast. An appendix with important general data and laboratory procedures has been added. The indexing is excellent, and the additional index for important laboratory tests in the common diseases should be very useful. Preceding the descriptions of the technical procedures are introductory remarks about the normal functions and clinical pathology of each organ or system. In places these explanations are not up to modern concepts or are too vague to be adequate. The book has an abundance of illustrations, most of them clear and well chosen. A smaller number of the pictures are actual photographs, which show the important structures clearly. The drawings are good and the student will profit from them more than from photographed specimens. Concerning laboratory methods, the value of certain tests (e. g. stomach tests) seems to be overstressed and could be simplified. A number of the older tests could be omitted. Instead of some of the simple methods with doubtful accuracy, the newer more accurate methods (such as enzyme determinations) may be preferred, though they involve more work and experienced technicians. Obviously this book was not written for the man engaged in medical research but for the technician, the medical student and the medical practitioner.

A Textbook of Gynecology. By Arthur Hale Curtis, M.D., Professor and Chairman of the Department of Obstetrics and Gynecology, Northwestern University Medical School, Chicago. Fifth edition. Cloth. Price, $8. Pp. 755, with 455 illustrations, chiefly by Tom Jones. Philadelphia & London: W. B. Saunders Company 1946.

This edition of Curtis's book, for years one of the best of the standard textbooks, is larger than the others, retains the balance, the fine illustrations and the high literary standards of its predecessors and has, of course, been brought up to date. It would be superfluous to recount the contents of the volume, for it is complete. The character of the book does require comment. Curtis has a remarkable gift for making the reader feel that he is in private conference with the author. After presenting both sides of debatable issues fairly, Curtis tries frankly to win the reader over to his view. In these days when textbooks tend to be thoroughly documented, encyclopedic, impersonal and rather dry, it is refreshing to encounter an author who makes no attempt to camouflage his personal opinion. The fact that Curtis admits gracefully and with good humor that he may be in error in these personal views seems only to give them added weight. At the same time there is established between author and reader a feeling of friendly familiarity which is the pleasantest quality of the work. Authoritative but not dogmatic, sound, yet up to date, excellently illustrated, this textbook may profitably be read by any one interested in gynecology.

Urologic Roentgenology. By Miley B. Wesson, M.D. Second edition. Cloth. Price, $5.50. Pp. 259, with 258 illustrations. Philadelphia: Lea & Febiger, 1946.

This edition of a work recognized as authoritative has been so thoroughly revised and rewritten as to constitute a practically new book. The plates have been gone over carefully and many old ones discarded and new ones added. The book is an intensely personal one, and the strong convictions and opinions of Dr. Wesson are prominent throughout. One instance is the statement in the section on intravenous urography that "no renal surgery should ever be performed before a diagnosis has been confirmed by a retrograde pyelogram." Many urologists consider retrograde pyelography unnecessary, and even detrimental, in many cases of renal stone and in most cases of hydronephrosis. Doubtful cases will, of course, always require a check by the retrograde method. A valuable feature of the book is the concise history accompanying most of the illustrations. The publishers have cooperated splendidly with the author. The quality of the paper is excellent, and in each of the photographs the pathologic condition is clearly demonstrated.

Queries and Minor Notes

The answers here published have been prepared by competent authorities They do not, however, represent the opinions of any official bodies unless specifically stated in the reply Anonymous communications and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted on request

DERMATITIS IN WOOLEN MILL WORKERS

To the Editor—Certain employees in our local woolen mills develop a dermatitis of a pustular nature when handling the dyes and chemicals The dyes used are all coal tar products, the chemicals are sodium bichromate, sodium sulfide, sulfuric acid, formic acid and acetic acid Please discuss measures to protect workers from these materials, such as some type of ointment for the hands and arms

John J Rouse, M D, Reedsburg, Wis

Answer—Dermatitis among dyers in woolen mills is not uncommon Most of it is due to sensitization to sodium bichromate, which is used as a mordant in the dye bath The other chemicals mentioned (sodium sulfide, sulfuric acid, formic acid and acetic acid) are all primary skin irritants in strong concentration and sensitizers in low concentrations

The best protective measures to be used by exposed workers are the wearing of impervious sleeves gloves and aprons These prevent contact of irritants with the skin Protective ointments are less effective and in some cases not practical because they may come off on the wool However, if protective ointments should be used, those of the water repellent type are the best Such types can be obtained in either the greasy form or the dry film form An ointment consisting of 70 parts of anhydrous lanolin and 30 parts of olive oil can be used for the greasy type of ointment The water repelling dry type of ointment consists essentially of about 10 parts of shellac dissolved in isopropyl alcohol with a filler of talc, titanium oxide and sodium perborate When applied to the skin, the alcohol evaporates and leaves a dry water repelling film of shellac in which is embedded the powders forming the white coating

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EFFECTS OF REPEATED IRRADIATION

To the Editor—Dr A states that the skin "throws off" x ray effects after thirty days and that small doses of x rays (used to treat eczematous conditions of the hands) may be repeated indefinitely, provided at least a month elapses between treatments Dr B states that (1) the skin can tolerate only a certain amount of x-rays over any one area during a person's entire life that (2) no more should be given after this critical amount (1 200 1 600 roentgens) has been administered and that (3) the effect of radiation is cumulative and never lost, i e, if a quantity of radiation was given at 20 years of age and then at 30 years of age, the total effect would be almost as harmful as if all were given within a short period What is the present concept?

M D, Pennsylvania

[This question was referred to two consultants whose respective replies follow —Editor]

Answer—Dr B is correct The amount of roentgen radiation that is tolerated without grossly visible injury varies among individuals and depends on the size of the area exposed, the quality of the rays and the time over which the radiation is given In general, permanent damage is done by more than 1 200 roentgens Much smaller amounts may at times cause severe damage Only a certain amount can be tolerated by any one area throughout a lifetime

Answer—Exactly how much x rays the skin will tolerate is not known The average American dermatologist administers 75 roentgens of low voltage unfiltered x rays a week for a total of four to six weeks for the treatment of eczema of the back of the hands This course of treatment is not repeated for at least a month If it becomes necessary to administer further radiation the conservative dermatologist would not give to any one area of skin more than four courses of treatment (1,200 to 1 800 roentgens) More than this amount might lead to permanent radiation changes in the skin

If a quantity of x rays is administered which is just short of that required to produce radiodermatitis and ten years later a similar quantity is administered to the same area, radiodermatitis may ensue The effects of x-rays are cumulative It is unsafe to repeat small doses of x-rays indefinitely (See MacKee, G M and Cipollaro, A C X-Rays and Radium in the Treatment of Diseases of the Skin, ed 4, Philadelphia, Lea & Febiger, 1946)

CAUSE OF INFANT DEATHS ON THE ZEBULON B VANCE

To the Editor—In the Washington Letter in the June 15, 1946 issue of The Journal a paragraph entitled "Death of Babies Aboard Ship Traced to Virus Disease" appeared "Representative Jackson, Democrat of Washington, reports that the War Department has revealed the cause of the deaths of eight servicemen's babies brought to the United States on the 'brideship' *Zebulon B Vance* as a virus disease, pneumoenteritis The disease has never occurred in human beings in this country before, it is reported An army board of inquiry has absolved the medical staff of the ship of any negligence or misconduct regarding the deaths of the babies after arrival of the ship May 19 in New York from Le Havre" This spring an unusually severe type of infant diarrhea occurred in this locality The usual methods of treatment seemed ineffective, and the best we could do was to give them supportive treatment and hope that they would weather the storm Stool cultures were negative for the usual group of diarrhea organisms, and the possibility was considered that this might be the same disease as that on the "brideship" How was the conclusion reached that the epidemic diarrhea occurring on the ship was a new clinical entity? If it is a new clinical entity, how does it differ from the other diarrheal epidemics of suspected virus etiology in infants previously reported in this country? What were the autopsy findings?

Fred C Gregg, M D, Tucson, Ariz

Answer—Apparently the press report of pneumoenteritis in infants on the *Zebulon B Vance* was not founded on fact On inquiry, a statement from the Surgeon General's Office is as follows "It is our opinion at this time that this disease [on the *Zebulon B Vance*] is not a new clinical entity, as further studies have failed to support such a conclusion"

INDICATIONS FOR CONTACT LENSES

To the Editor—A middle aged mother of two children, who has worn glasses since she was 14, is near sighted and somewhat astigmatic She wants contact lenses What are the advantages and disadvantages of contact lenses?

M D, New York

Answer—Advantages Patients with keratoconus often can obtain but little improvement with common glasses Keratoconus, as its name implies, is a change (occurring most frequently during puberty) in which the cornea protrudes in its center, taking the shape of a cone The radius of curvature of the cornea in keratoconus is usually around 6 mm and often is combined with irregular astigmatism and sometimes with superficial central opacities Since the contact lens can correct these defects with a simple curved lens, the visual improvement is usually considerable

Myopic patients who have a spectacle correction above 6 to 8 diopters cannot see much more than 20/30, owing to the fact that ordinary lenses, as they are some distance from the eye, reduce the size of objects seen through them Many patients who have myopia even higher than that have a corneal curve of approximately 7 5 mm The contact lens does not diminish the size of the object seen through it, and, as patients with 7 5 corneal curvature can have a contact lens with a base curve of 8 5, the visual improvement is such that they frequently attain 20/20 vision

Patients with irregular or high astigmatism enjoy improved vision, since the corneal irregularity is replaced by a regular spherical curve Patients with one aphakic eye often do not have binocular vision even when the vision is 20/20 in both eyes, owing to two factors (1) The size of the image of the aphakic eye is approximately 25 per cent larger than the normal eye, (2) if the patient moves the eye behind ordinary lenses there is a prismatic effect that increases with the power of the plus lens If the difference in size is corrected with iseikonic lenses the prismatic effect with the movement of the eyes will still be present and will make it impossible to attain fusion on lateral and especially vertical movement of the eyes

Contact lenses diminish considerably the difference in the size of images received by the two retinas in aphakia and offer the best chance for fusion

Another advantage of contact lenses is to be found in cases of corneal opacities which are not too dense to prevent fair visual acuity These opacities are usually superficial and besides the irregular astigmatism produced, they disturb optical imagery especially because they are located just at the line of separation of the different indexes of refraction, i e, cornea 1 336 and air 1 00 This causes a more troublesome diffusion of light than if the opacity was located deeper in the cornea

The contact lens, by covering the corneal opacity, places it relatively deeper to the anterior refractive surface For practical purposes the index of refraction of the cornea is the same as the solution Therefore the opacities, instead of being in line of separation of the two indexes of refraction, become located deeper and as a result the blurring is lessened

Disadvantages Many patients who wear ordinary lenses of the usual type think they can be replaced by contact lenses Contact lenses do not give better vision than common glasses when the refractive error is of low degree Therefore, the patient will not see more with the contact lens than he would with his ordinary glasses A contact lens is a foreign body which should be well placed and well fitted to the eye It is not usually irritating if the fit and solution are correct and is not harmful to the eye, but often the patient feels as though he had something between the lids This introduces a new sensation to which the individual must become accustomed

The "liquid lens" i e the solution placed between the lens and the cornea infiltrates the corneal epithelium in the same way as water infiltrates the skin of the fingers when submerged a long time This causes blurring of vision The several solutions devised for this use have not as yet been perfected The blurring of vision usually appears three to four hours after the contact lens has been in place and when the lenses are removed from the eye the vision continues to be blurred for some time (usually fifteen minutes to half an hour) The employment of a contact lens requires a great deal of patience in coping with its adjustment, and those who can be benefited by these lenses are not always the ones psychologically suited for their use A good rule to follow is The more the patient needs the contact lens the better he is able to put up with its disadvantages

TREATMENT OF NEUROSYPHILIS

To the Editor —A woman aged 50 has a 4 plus blood Kline reaction and a 4 plus spinal fluid Kline reaction with a positive colloidal gold test She does not give a history of primary or secondary lesions Her general complaints are weakness and nervousness, and physical examination is entirely negative Should the Army 30-60-03 treatment be given or should the more recent treatment be employed which is being used universally by veterans' hospitals at this time for all types of syphilis? This treatment consists of a total dosage of 2,800,000 units of penicillin in individual doses of 25,000 units intramuscularly every three hours around the clock for fourteen days, dichlorophenarsine is given concurrently on the first, fourth, seventh, tenth and thirteenth days of treatment intravenously in dosages of 1 mg per kilogram of body weight to a maximum of 68 mg , bismuth subsalicylate in oil in individual dosages of 200 mg each given on the first, seventh and thirteenth days of treatment. Is the latter treatment justified, with the usual three month, six month, and one year follow up?

M D , Missouri

ANSWER —Before any treatment of this patient is undertaken she should (*a*) be examined by a competent neuropsychiatrist or by a syphilologist expert in the neuropsychiatric field and (*b*) she should have performed an adequate test of her spinal fluid, which includes a cell count performed on a freshly drawn specimen, quantitative estimation of protein content and complement fixation (Wassermann) test rather than any flocculation test and the details of the colloidal gold or other colloidal test should be known

From the inquirer's statement the only diagnostic comment which can be made is that the patient has neurosyphilis This is not, however, the important consideration in treatment Instead, it is essential that the attempt be made accurately to delineate the type of neurosyphilis which the patient has

In any case neither of the treatment systems suggested by the inquirer is suitable Almost certainly it is desirable for the patient to be treated with fever by means of induced tertian malaria, combined with the simultaneous administration of somewhere between 4 and 10 million units of penicillin

After treatment is given with fever plus penicillin, follow-up should extend over a period of many years rather than a single year or less

TREATMENT OF THROMBOANGIITIS OBLITERANS

To the Editor —A man with severe thromboangiitis obliterans has been relieved somewhat by Depropanex but has not improved very much Are there any new drugs that might be of value?

L O Simenstad, M D, Osceola, Wis

ANSWER —Unfortunately, medication is not available at present which is highly effective in the relief of thromboangiitis obliterans Depropanex, the product mentioned in the query, is a proprietary preparation consisting of a deproteinated pancreatic extract It is a saline solution of a protein free, nitrogenous fraction obtained by acid-alcohol treatment of beef pancreas free from insulin, histamine and acetylcholine This proprietary preparation is recommended by the manufacturers as a vasodilator and antispasmodic The reports on its use vary greatly, some favorable others that it is of little or no value Animal experiments with this product indicate that it is not absorbed following oral administration Injections of typhoid H antigen have been used for years as a vasodilator in cases of thromboangiitis obliterans with some benefit, but it has not proved uniformly successful, and there are certain disadvantages Increase of fluid intake with sodium chloride has been used to produce hydremia, with occasional beneficial results Xanthine derivatives or papaverine hydrochloride may be tried to relax spastic vessels or dilate collateral channels

A new drug which will be on the market soon, and which is already reported in the literature, namely, tetraethyl ammonium bromide, has given as promising results as any medical therapeutic measure yet developed In some cases injection of this chemical for three or four days has given relief over a period of several weeks

The surgical treatment of thromboangiitis obliterans must be seriously considered It is of special value before ulceration has occurred The efficiency of the collateral circulation may be greatly increased and in some cases the extremity, even when extensive ulceration is present, may be saved by lumbar sympathectomy

TRAUMA OF TONGUE AND POSSIBLE RHABDOMYOMA

To the Editor —A man aged 30 bit the anterior third of the dorsum of the tongue while eating Examination ten days later revealed a painless nodular, circumscribed mass 3 mm in diameter covered with normal epithelium Submaxillary adenopathy was not present The mass was removed Pathologic study showed traumatized striated muscle fibers in the deeper parts of the section which had undergone a certain amount of discoloration The continuation of these fibers toward the periphery showed pathologic changes, their nuclei had become large and vacuolated and each contained a large prominent nucleolus Syncytial formations containing such nuclei were seen Toward the mucosa especially around the vessels these cells were spindle shaped, and mitotic figures were seen

The possibilities have been considered that, as a result of the trauma the striated muscle has undergone a malignant rhabdomyomatous transformation or that this change may be a simple reaction to the trauma and will heal in time Is this a malignant manifestation or a normal muscle tissue reaction to the trauma? If it is suggestive, what treatment is advisable?

A Hovnanian, M D , Aleppo, Syria

ANSWER —There is no evidence in the pathologic report of any rhabdomyomatous transformation The appearances described are those of healing of injury to muscle and regeneration

22,000,000 VOLT ELECTRON TREATMENT OF CANCER

To the Editor —A patient with inoperable cancer has asked information about 22,000,000 volt electron treatment of carcinoma printed in a United Press story from Chicago July 18, 1946 Please discuss this treatment

Hamlin Mattson, M D , Minneapolis

ANSWER —As far as is known, cancer patients have not been treated with 22,000,000 volt electrons, nor have 22,000,000 volts of x-rays been used in the treatment of cancer

TISSUE THERAPY OF RETINITIS PIGMENTOSA

To the Editor —My attention has been called to the inquiry, on page 117 of the issue of Sept 14, 1946 under Queries and Notes on the tissue therapy of retinitis pigmentosa The statement is made that "as far as is known there are no ophthalmologists in this country using Filatov's technic or conducting investigations on his work" I have been intensively studying Filatov's work in relation to retinitis pigmentosa at the New York Hospital since June of this year So far the method has been used on over 40 patients It is entirely too early to offer any report on this work except that we have had some encouraging results and are going to continue the investigation along various lines to determine its merits and to work out plans of treatment I must emphasize the fact that the work is experimental and by no means in the "cure" stage Those samples of Filatov's work on "tissue therapy" which have appeared in this country have been sketchy and are not entirely up to American scientific standards in completeness or length of follow-ups The methods are not as simple as they sound, and we have run into some bad reactions Some of these in private practice could lead to legal difficulties The method merits further study both because of Filatov's good reputation and because of the few encouraging results which we have seen However, because of the very nature of this work it should be done only in a few large centers which have ample material and facilities to give it a fairly comprehensive test I believe that it will be found that this will lead to considerable modification of the method of usage and of the materials employed Even Filatov does not believe that his method is the last word in the therapy of retinitis pigmentosa It is still far from being an established therapeutic procedure and is not yet adaptable for ordinary office routine Retinitis pigmentosa is not a common disease It would certainly be unfair, and perhaps dangerous, for many individuals to attempt this investigative work on a mere handful of patients and then to draw conclusions

Dan M Gordon, M D , New York

To the Editor —Aided by a grant from the Council on Pharmacy and Chemistry of the American Medical Association and by another grant from the American-Soviet Medical Society, we are investigating and using Filatov's technic in the treatment of retinitis pigmentosa Our experiments are being done under controlled conditions and with special attention to dark adaptation studies of the retina The work is being carried out in the departments of ophthalmology and physiology of the New York Medical College, Flower and Fifth Avenue Hospitals

Samuel L Saltzman, M D
Charles Haig, Ph D
New York

Assistant Clinical Professor of Ophthalmology and Assistant Professor of Physiology, Respectively

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THERAPEUTIC "INFORMATION PLEASE"

The following eight papers were presented as a panel discussion, followed by a question and answer period, before a joint meeting of the Section on Internal Medicine and the Section on Experimental Medicine and Therapeutics at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 5, 1946. The panel fails to include the paper by Dr. Frank E. Adair on "Cancer," since the manuscript was not provided. The manuscripts are published without the bibliographies because of the somewhat informal manner of the presentation. Nevertheless the success of this panel discussion in attracting great numbers of listeners who were hearty in their approval of the presentation leads to its publication in this form. The Moderator was Dr. James A. Paullin, Atlanta, Ga.

HEMATOLOGY

CYRUS C. STURGIS, M.D.
Ann Arbor, Mich.

THERAPEUTIC EFFECT OF FOLIC ACID

One of the most outstanding advances in hematology since the introduction of liver therapy is the demonstration that crystalline synthetic folic acid, which occurs in its conjugated form as a component of the vitamin B complex, is effective in the treatment of macrocytic anemias with a megaloblastic bone marrow. Such anemias include addisonian pernicious anemia, sprue, nutritional anemia and the macrocytic anemia of pregnancy, of infancy and following total gastrectomy. It has not been proved to be of value in the treatment of other disturbances of the blood, with the possible exception of the leukopenia associated with nutritional states. When administered orally or parenterally to patients with pernicious anemia or allied macrocytic anemias, in doses of 10 to 20 mg. daily, it induces a prompt rise in reticulocytes of the circulating blood, a standard increase in the red blood cell count and hemoglobin and all the well known dramatic clinical manifestations of recovery observed in such patients when potent liver extract is given. The maintenance dose is unknown, but it may be as small as 20 mg. a week. Careful, long-continued clinical observations are essential to determine the ultimate place of folic acid in the treatment of the macrocytic anemias. At present, however, it can be said that the preparation is one of great promise which may completely supplant liver extract as a therapeutic agent, especially in those patients who are allergic to liver preparations. Its mode of action is concerned with accelerating the development of the immature red blood cells in the bone marrow and perhaps with the metabolism of nucleic acid in these cells.

EFFECT OF RADIOACTIVE ELEMENTS AND "DEMA"

Radiophosphorus, which loses one half of its output of beta radiation every fourteen and three-tenths days, is effective in the treatment of polycythemia vera when given intravenously or orally as sodium acid phosphate, in doses of 5 to 10 millicuries. Either spray roentgen ray therapy or radiophosphorus when given alone or in the initial stages of treatment in combination with phlebotomy reduces the red blood cell count to normal. It may be held at this level by the application of either one of these agents at intervals of six months to a year or more. These forms of treatment are undoubtedly the most effective ones for the disease. No claim can be substantiated, however, that radioactive elements at present can produce superior results to roentgen therapy either in leukemia or in the lymphoblastomas.

The use of "Dema," one of the nitrogen mustards, with the formula bis (chloroethyl) methylamine hydrochloride, is still in the experimental stage as a form of treatment for Hodgkin's disease, leukemia, and polycythemia vera. The action of this substance is similar to that of roentgen rays. It has extremely serious toxic effects on the peripheral blood and the bone marrow, but when carefully controlled may prove to be a useful form of therapy for patients with these disorders who become resistant to the roentgen ray.

STUDIES ON BLOOD PLASMA

Extensive use in the last war has demonstrated that plasma may be preserved indefinitely by freezing and dehydration without important changes and when needed can be reconstituted and injected intravenously with gratifying results in the treatment of shock. The remarkable advances in the chemical fractionation of the blood plasma, largely through the work of Cohn, are too comprehensive to discuss in detail. This investigator and his associates have demonstrated that the various components of the plasma can be separated in five main types chemically, and specific functions have

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From the Department of Internal Medicine and the Thomas Henry Simpson Memorial Institute for Medical Research, University of Michigan.

been ascribed to each of them. These are concerned primarily with the maintenance of fluid balance between the blood and the tissues of the body and hence are closely related to shock and formation of edema; with immunity to such diseases as measles and infectious hepatitis; with the isoagglutinins responsible for the blood types; with the various components of the clotting mechanism; with the antihemophilic globulin; with the maintenance of normal blood pressure and perhaps with the production of hypertension; with various enzymes and proteins, and with the group of lipoproteins which undoubtedly play an important role in various essential functions of the body.

THE RH FACTOR

The discovery of the Rh factor in 1940 by Landsteiner and Wiener has provided an explanation for certain hitherto obscure hemolytic reactions to blood transfusions and made clear the etiology of almost all cases of erythroblastosis fetalis, a commonly fatal hemolytic anemia of the newborn or of the fetus in utero. The practical implications are that the 15 per cent of the population who are Rh negative should never receive transfusions of other than Rh-negative blood if severe and sometimes fatal reactions are to be avoided; and that an Rh-negative woman who is impregnated by a Rh-positive man has 1 in 25 chances, or less, after the first pregnancy, of bearing a child with erythroblastosis fetalis. If the complications are to be avoided, it is imperative to determine the Rh type of all persons, male or female, who are to receive a blood transfusion, and of all women who are pregnant. An Rh-negative person should always receive Rh-negative blood as a transfusion.

VITAMIN K AND HEMORRHAGE

The observation that a hemorrhagic tendency may be due to a deficiency in prothrombin, one of the essential components of the clotting process, is of clinical importance. This deficiency is the cause of the hemorrhagic condition associated with obstructive jaundice, with hemorrhagic disease of the newborn, with certain states which interfere with intestinal absorption, such as sprue and ulcerative colitis, and with extensive hepatic disease. It is now well established that prothrombin cannot be formed by the liver unless vitamin K is present. The administration of vitamin K to the pregnant woman in the form of menadione, in doses of 2 mg. daily, during the last week of pregnancy will prevent hemorrhagic disease of the newborn due to hypoprothrombinemia. Of great importance also is that the parenteral administration of vitamin K preparations will eliminate the bleeding tendency associated with obstructive jaundice and thereby remove the extra hazard to surgical treatment of patients with this condition. In general it may be stated that the administration of vitamin K preparations, especially when the preparations are given parenterally, will control the hemorrhagic state due to hypoprothrombinemia in all conditions except that associated with hepatic disease.

DIAGNOSTIC VALUE OF STERNAL PUNCTURE

Information obtained from sternal puncture confirms the diagnosis in two thirds of the patients with hematologic disorders and presents a specific picture in about 1 of 6 such patients. In the latter group are patients with multiple myeloma, leukemia, addisonian pernicious anemia and allied conditions, agranulocytosis, lipoid histiocytosis and various parasitic diseases such as malaria and leishmaniasis. Useful information is obtained in polycythemia and hypochromic, aplastic, hemolytic and myelophthisic anemias. There are two points for emphasis: 1. Positive are more reliable than negative findings. 2. An experienced observer must interpret the findings.

THE BLOOD BANK

The undoubted value of the blood bank has been established in the past few years. It should be a part of the equipment of every hospital. Two main advantages result from a well conducted system for the storage of citrated blood. In the first place, it provides an almost unlimited amount of tested, typed blood which can be stored for at least seven days and which is immediately available for use. Second, it reduces materially the cost of blood transfusions to the patient. This means that many patients can be given multiple transfusions which otherwise might not be available. With the ease that blood may be secured for this purpose, it should be kept in mind that adult males without bleeding may develop hemochromatosis following multiple transfusions. This results from the inability of such patients to excrete iron once it has been injected into the vascular system.

CONTROL OF ANEMIAS OF PREGNANCY

It has been demonstrated in recent years that a macrocytic or microcytic anemia of pregnancy, more severe than the physiologic anemia of that state, occurs in from 20 to 30 per cent of all gravid women. Furthermore, it should be emphasized that such anemias can be controlled or prevented in a great majority of instances if the patient is given 5 grains (325 mg.) of ferrous sulfate three times daily and partakes of a general average diet containing an adequate amount of protein, the minimum being provided by one serving of lean meat, a quart of milk and an egg daily. For the sake of the mother and the child, such simple, harmless and efficient measures should be instituted universally as soon as a pregnancy is recognized and should be continued throughout lactation.

Occasionally certain nutritional macrocytic anemias, sometimes associated with pregnancy, are refractory to refined preparations of liver when given parenterally. They respond favorably, however, to the oral administration of liver extract. The practical importance and the etiologic implications of this observation have been emphasized recently by Watson and Castle.

STUDIES ON AGRANULOCYTOSIS

Agranulocytosis is probably always due to sensitivity to a drug, the most common causative agents being aminopyrine, the sulfonamide compounds, arsenic and antithyroid drugs such as thiouracil. The syndrome develops in only a small percentage of the patients receiving these preparations, however. The mortality among untreated patients exceeds 50 per cent. Early elimination of the responsible drug and the prompt administration of penicillin in doses of 40,000 units every two hours, intramuscularly, should reduce the mortality rate almost to zero.

TROPICAL MEDICINE

ERNEST CARROLL FAUST, Ph.D.
New Orleans

The year 1939 may be regarded as the beginning of the modern era in the prevention and treatment of diseases which are particularly prevalent in warm climates. Previous to this time effective immunization was available against typhoid and the paratyphoid fevers, smallpox, tetanus, spotted fever and yellow fever, while immunization against plague and cholera had as yet not been critically evaluated. Quinacrine (Atabrine) had been demonstrated to be therapeutically a good substitute for quinine, and there were moderately satisfactory drugs for the treatment of amebic dysentery, yaws, relapsing fever, schistosomiasis, hookworm disease, African trypanosomiasis and kala-azar. Pyrethrum and rotenone were recognized as good insecticides. Yet five hundred million human beings were suffering from malaria each year; typhus, plague and cholera were killing hundreds of thousands annually, and other common tropical diseases were taking a heavy toll.

Increased communication with the tropics, particularly by air transport, was providing accelerated stimulus to control diseases in these hyperendemic areas, since they were retarding commercial development and conceivably might be imported into relatively clean communities in America and Europe. The problem of protecting health and even life itself became more imperative when World War II compelled the training of troops and the carrying out of military operations in practically all parts of the globe where tropical diseases were prevalent. Intensive, intelligent cooperation in experimental research between military and civilian groups in the United States and the British Commonwealth, as well as courageous clinical investigation, on a scale previously unconceived, made possible the rapid strides which have taken place in the prevention and treatment of tropical diseases.

PATHOGENESIS AND SYMPTOMATOLOGY

Investigation on the pathogenesis of many diseases has provided a clearer interpretation of their symptoms, particularly during the incubation and early clinical stages. Bancroft's filariasis, schistosomiasis, scrub typhus and Bullis fever have afforded abundant material for clinical study, while sandfly fever has been observed after both natural and experimental exposure of substantial groups of persons.

DIAGNOSIS

Concentration technics have been improved for the more certain recovery of Schistosoma eggs from patients' excreta and of microfilariae from blood and other fluids of the body. Species-specific serologic and immunologic methods have been perfected for the diagnosis of epidemic and murine typhus, spotted fever, scrub typhus, Q fever, amebiasis, bartonellosis, kala-azar, oriental sore, espundia and Chagas' disease, while better group-specific antigens have been developed for the diagnosis of Bancroft's filariasis, onchocercosis and schistosomiasis.

IMMUNIZATION

In plague the Haffkine type of vaccine has been improved so as to confer protection on fourfold as many persons as among the uninoculated, while the Otten type of vaccine, employing avirulent living Pasteurella pestis, has been demonstrated to provide 80 to 90 per cent protection among several millions inoculated in Java, South Africa and Madagascar. By the selection of highly virulent strains of cholera vibrios, vaccines have been prepared and administered to hundreds of thousands of persons in Burma and India, with evidence of about 90 per cent protection in comparison with high susceptibility to the disease observed among uninoculated controls. Immunization against typhus with the Cox egg yolk sac vaccine and the Castañeda mouse lung vaccine has greatly reduced infection among exposed persons and has reduced mortality among the immunized almost to the vanishing point. There is now the prospect of satisfactory immunization against scrub typhus, dengue fever, and possibly sandfly fever.

TREATMENT

1. *Antimalarials.*—Quinacrine has been demonstrated to be not only an eminently satisfactory substitute for quinine in the treatment of clinical malaria, but in daily doses of 1.5 grains (0.1 Gm.) is known to provide almost solid suppression of the disease for persons in highly malarious areas. Although this drug will not prevent the breaking through of vivax infection subsequent to the cessation of suppressive treatment, it almost invariably eradicates the falciparum parasite, thus controlling the most widespread and most commonly dangerous disease in the tropics.

Two new antimalarials, chloroquine (7-chloro-4-[4-diethylamino-1-methylbutylamino] quinoline) and paludrine (N_1-para-chlorophenyl-N_5-isopropylbiguanide acetate) will soon be available commercially for clinical use, after long experimental and preliminary clinical tests. In the United States alone more than fourteen thousand natural and synthetic substances have been tested as potential plasmodicides, with clinical study on eighty of the most promising. Chloroquine ("Aralen," Winthrop Chemical Company, Inc.) has been found to be superior to quinacrine in several respects: It produces less gastrointestinal irritation, apparently causes no psychotic disturbances, leaves no discoloration of the skin and in therapeutic doses is well tolerated and highly effective in producing more rapid symptomatic relief, fewer relapses and longer periods between relapses in vivax infection. A full course of treatment consists in the oral administration of 9 grains (0.6 Gm.) the first day and 4.5 grains (0.3 Gm.) on the three following days. For suppressive therapy one 4.5 grain tablet each week is apparently adequate to prevent a clinical break-through. Paludrine (Imperial Chemical Industries, Ltd.) has not as yet received as thorough clinical testing as chloroquine but promises to be considerably better than quinacrine.

Thus far, no antimalarial has been discovered which has been proved to be a true prophylactic, although a plasmoquin derivative now under clinical study may possibly serve this end.

As a corollary to advances in specific antimalarials, the recent recognition of algid malaria as a variety of medical shock, in which there is pronounced dilatation of the smaller blood vessels, suggests a rationale for successful management of a patient with this type of malaria.

2. *Leishmanicidal Drugs.*—Antimony and potassium tartrate (tartar emetic) was the first drug to be used

successfully in the treatment of leishmaniasis (mucocutaneous variety). It soon became the drug of choice in kala-azar (visceral leishmaniasis), although the less stable antimony and sodium tartrate (B. P.), when freshly prepared, is equally effective and is better tolerated. Since 1915 several synthetic pentavalent antimonials have been given careful clinical trial (Stibenyl [the sodium salt of acetyl-*p*-aminophenylstibinic acid], Stibosan [sodium meta-chloro-para-acetylaminophenylstibinate], Neostam [stibamide glucoside], Urea Stibamine, Aminostiburea, Neostibosan, Distibinyl and solustibosan). Of this group Urea Stibamine (the carbamide salt of para-amino-phenyl-stibinic acid) and Neostibosan (diethylamino-*p*-amino-phenyl stibinate) have become standard prescriptions. More recently solustibosan (sodium antimonyl gluconate; Bayer 561; "Stibanose," Winthrop Chemical Company, Inc.; "Stibatin," Glaxo Laboratories) has been tested both in experimentally infected golden hamsters and in clinical cases and has proved to be as highly effective and as well tolerated as Urea Stibamine and Neostibosan.

In the Egyptian Sudan a severe type of kala-azar has frequently been refractive to pentavalent antimonials, while cases of antimony-resistant kala-azar are not uncommon in China, India and other endemic foci. The aromatic diamidines, particularly Stilbamidine, Pentamidine and Propamidine, are useful in these cases. Both in experimental tests and in the clinic, Stilbamidine (4,4′ diamidino stilbene) has been demonstrated to be therapeutically the equal of Neostibosan in the average case of visceral leishmaniasis and to be curative in antimony-resistant infections. Because of the high toxicity of the aromatic diamidines, great caution must be exercised in their administration.

3. *Trypanosomicidal Drugs.*—Although continued clinical study has been made of new arsenicals and other drugs in the treatment of African trypanosomiasis, nothing has been found which promises to supplant tryparsamide (Merck) or suramin sodium (Bayer 205; Naphuride, Winthrop Chemical Company, Inc.). However, the aromatic diamidines, especially Pentamidine (4,4′-[pentamethylenedioxy]dibenzamidine), Stilbamidine and propamidine (4,4′-[trimethylenedioxy] dibenzamidine), which were synthesized with the hope that they would be curative in human trypanosomiasis, have been found to produce cures in cases of early disease and thus may prove to be helpful substitutes in arsenic-fast infections or those with severe optic neuritis. Moreover, in highly endemic areas Bayer 205 has been employed prophylactically, and a single administration of 1 Gm. provides trypanosome-free blood for as long as four months.

4. *Antiamebic Drugs.*—In a recent critique on the treatment of amebiasis, a distinguished British investigator has reached the conclusion that no antiamebic drug thus far employed is "infallible in sterilizing a gut infection of E. histolytica, though there is evidence that each of them may contribute something to this end."

Emetine hydrochloride (U. S. P.) is the only drug known to eradicate extraintestinal amebiasis. It is likewise useful in controlling acute amebic dysentery, but in a high percentage of cases is not curative. The parasites tend to become resistant to this drug and perhaps even to other drugs now used in the treatment of amebiasis. Because of these effects and because of its high toxic factor, the use of emetine hydrochloride should be restricted in intestinal amebiasis to a minimum number of injections required to reduce severe symptoms, and the drug should never be employed in the treatment of mild or asymptomatic infections. Emetine bismuth iodide (B. P.) has been used for oral administration in amebic colitis and is regarded by British physicians as superior to most other drugs for this purpose.

Arsenicals: When acetarsone (Stovarsol; acetylaminohydroxyphenylarsonic acid) was introduced by French workers for the treatment of amebiasis, it proved to be a useful alternative to ipecac and emetine. More recently it has been supplanted by carbarsone (U. S. P.) (4-carbamino-phenyl arsonic acid), which is probably equally effective and is much better tolerated. In dogs acutely ill from experimental infection with human strains of Endameba histolytica carbarsone has been found to exhibit a 75 per cent rate of cure and in monkeys a 42 per cent rate. Recent tests with carbarsone oxide (*p*-carbamino-phenyl arsenous oxide) on amebiasis in monkeys and in a few clinical cases have demonstrated that it is potentially a promising amebicide. Other types of antiamebic drugs must be employed in the treatment of those persons who manifest intolerance of arsenic.

Compounds of Iodine: In 1921 chiniofon (U. S. P.) (iodoxyquinoline sulfonic acid) was introduced clinically for the treatment of amebiasis, under the German name "Yatren," and was found to be highly effective in cases of acute as well as of chronic amebic colitis. Its oral administration has been frequently supplemented by high retention enemas of solution of chiniofon. Both in experimentally infected dogs and in human infections its rate of cure is high (dogs, 100 per cent; human beings, about 90 per cent). It is well tolerated except for the production of a watery stool in some cases, but this is not necessarily a contraindication to its continued use unless the patient is severely dehydrated. Vioform (U. S. P.) (iodo-chloro-hydroxyquinoline) was first advocated as a specific for the treatment of amebiasis in 1933. It has a high amebicidal rate both in experimental animals (monkeys, 87.5 per cent) and in human beings. Its clinical usefulness has probably not been sufficiently emphasized. A third compound, diodoquin (N. N. R.; G. D. Searle & Co.) (5,7-diodo-8-hydroxyquinoline), has more recently been given extensive clinical use. Although it has a higher iodine content than chiniofon and vioform, it is absorbed from the wall of the bowel much more slowly. Its action is correspondingly slower, so that three weeks instead of five to seven days are required for a full course of treatment. Physicians who have given this drug thorough trial rate it between 85 and 99 per cent curative. It has essentially no contraindications.

A great deal of recent effort has been given to the isolation of certain active fractions of chaparro amargoso (Castela nicholsoni texana), the Mexican medicinal plant which empirically has been found to have antiamebic properties. The results are not yet sufficiently advanced for critical evaluation.

5. *Schistosomicidal Drugs.*—Effective treatment for schistosomiasis began in 1918 with the use of antimony and potassium tartrate, U. S. P. (tartar emetic). This drug was partially supplanted in 1929 by the trivalent antimonial, fuadin (sodium antimony III bis-catechol-

2,4 disulfonate) (stibophen B. P.), which is administered intramuscularly instead of intravenously and is on the whole better tolerated. A few years later (1936) Anthiomaline (antimony and lithium thiomalate) was introduced by French investigators for treatment of schistosomiasis. Experimentally and in a few clinical cases the pentavalent Neostibosan has also been tested. In animals all these drugs have appreciable effect on Schistosoma mansoni, but none of them clears the infection. Clinically fuadin has a high relapse rate (70 per cent) in schistosomiasis japonica following a schedule of treatment employing 0.566 Gm. of metallic antimony (which is considerably more than the recommended dose), while antimony and potassium tartrate, administered as a 0.5 per cent solution and totaling approximately the same amount of antimony (0.565 Gm.), has provided the impressively lower relapse rate of 16 per cent. Both experimentally and in the hands of some physicians with patients having schistosomiasis Anthiomaline has failed to sustain its previous reputation, but other physicians regard it with confidence.

It is important to remember that antimony therapy is highly toxic for the liver, as indicated by increased elevation of the icteric index with successive courses of treatment.

Clinical investigators in South and West Africa have treated vesical and Manson's schistosomiasis by intensive administration of antimony. One series of 100 patients has been given antimony and sodium tartrate, 1.5 per cent solution in saline and dextrose solution, at 9 a. m., noon and 3 p. m. on two consecutive days, for a total dosage of 12 mg. per kilogram of body weight. Few side effects were encountered, and three months later Schistosoma eggs were not found in urine or stool. In another series (46 cases) fuadin (stibophen B. P.) was administered in the amount of 0.46 grain (30 mg.) daily for two weeks (omitting Sundays), and Anthiomaline (May and Baker), in the amount of 0.49 grain (31.9 mg.) daily for the same period of time. Only 4 members of this group were considered not cured.

New drugs with considerably better promise than antimonials for the cure of schistosomiasis are still under experimental trial. These include certain aminoanthraquinones and phenothiazines, which provide 60 to 90 per cent clearance of the worms in seven days, with 100 per cent survival of the experimental hosts. Only one newly tested antimonial has thus far shown as satisfactory results.

In general, it is important to note that S. japonicum infection, the most serious type of human schistosomiasis, is the most difficult to eradicate.

6. *Filaricidal Drugs.*—Intensive experimental and clinical tests with several antimonials and arsenicals, as well as other preparations, have failed to demonstrate direct lethal action on the parent worms in cases of Bancroft's filariasis. However, there is some evidence that a sustained reduction in the number of circulating microfilariae and their complete elimination in peripheral blood over a period of time indicate bona fide filaricidal as well as filaristatic activity. Fortunately the great majority of American military personnel who showed early manifestations of the disease following exposure in the South Pacific area have recovered without the appearance of chronic lesions.

7. *Anthelmintics for Intestinal Helminthiases.*—No new drugs have been introduced within recent years. Crystoids anthelmintic (a pill containing hexylresorcinol) is satisfactory for treating ascariasis and is helpful in removing hookworms. Tetrachlorethylene (U. S. P.) is commonly indicated for hookworm infection but has not been particularly successful in the Southwest Pacific where Ancylostoma duodenale as well as Necator americanus were encountered. Gentian violet medicinal (U. S. P.) is the drug of choice for strongyloidiasis (coated with one and one-half hour Seal-Ins) and for oxyuriasis (coated with four hour Seal-Ins or Enseals). Oleoresin of aspidium (U. S. P.), fresh, is first choice and carbon tetrachloride (U. S. P.) second choice for tapeworm infections.

8. *Antirickettsial Therapy.*—For clinical treatment in the typhus group of diseases considerable success has been achieved by the use of immune serum early in the disease. More recently, however, para-aminobenzoic acid has been demonstrated to be relatively specific when administered during the first week following the onset. This therapy has been employed in epidemic typhus, spotted fever and scrub typhus (tsutsugamushi disease). The drug is administered orally in powder form, partly neutralized by sodium bicarbonate to lessen gastric acidity. In order to maintain an average blood plasma level of 30 to 60 mg. per hundred cubic centimeters an initial dose of 8 Gm. is followed by doses of 3 Gm. every two hours. The results consist of (1) decrease in about twenty-four hours and relatively rapid disappearance of toxic manifestations; (2) drop in temperature in about two days; (3) reduction in complications, as bronchitis, pneumonitis, myocarditis and hemorrhage; (4) minimal leukopenia and granulocytopenia; (5) shortening of the period of convalescence, and (6) a practical guarantee that fatalities can be eliminated.

9. *Sulfonamide Therapy.*—The sulfonamide drugs have produced satisfactory results when employed in bacillary dysentery, cholera and plague.

In bacillary dysentery treatment with sulfonamide compounds is particularly effective in the acute condition but is also valuable in chronic disease and for carriers. Sulfanilamide, sulfaguanidine and sulfapyridine have the lowest shigellicide ratings. Succinylsulfathiazole (Sulfasuxidine) and phthalyl sulfathiazole (Sulfathalidine), as well as sulfanilyl benzamide, are all well tolerated and clinically effective. Sulfanilyl benzamide apparently has low toxicity and is highly absorbable. Sulfathiazole and sulfanilyl benzamide are particularly useful against the Sonné type of the disease. Sulfadiazine has been found to be the most efficient clinically and is more effective than other sulfonamide compounds in eliminating Flexner type organisms in carriers. It may be advisable to give sulfadiazine prophylactically during epidemics. However, during epidemics of bacillary dysentery (Flexner types), evidence has been produced that the organisms become sulfonamide-fast.

Sulfonamide drugs are contraindicated for complicating infections in the typhus group of fevers when para-aminobenzoic acid is being administered.

In cholera considerable success has attended the combined administration of blood plasma to combat shock and sulfonamide drugs. Sulfaguanidine is possibly somewhat superior to sulfapyridine and sulfathiazole; moreover, if administered at the onset of the disease, sulfadiazine plus plasma may be depended on to be 100 per cent effective in assuring recovery of the patient. In Indian villages in cases of untreated cholera fatality ranges from 40 to 70 per cent. Patients who are hospitalized and are given isotonic solution of sodium chloride and supportive treatment average about 15 per cent mortality. Treatment with isotonic solution of sodium chloride and sulfonamide drugs reduces the rate to 2 per cent. Previous cholera vaccination within ten to twelve months provides about 90 per cent protection and lessens the severity of the disease for those who contract it.

In plague, immune serum and sulfonamide drugs have greatly reduced the expected mortality. In field tests at Latur in Bihar State, India, the death rate was 53.6 per cent in 149 controls (all types) as contrasted with 23.5 per cent in 157 persons treated with immune serum, 27.0 per cent in 122 persons treated with sulfapyridine, 20.8 per cent in 230 persons treated with sulfathiazole cases and 20.0 per cent in 60 persons treated with sulfathiazole plus antiserum. The comparable mortality percentages for patients with severe septicemia were: 96.4 (56 patients), 69.0 (42 patients), 72.2 (36 patients), 55.1 (65 patients) and 38.1 (21 patients). All cases of pneumonic plague had a fatal termination irrespective of therapy. In a 1944 epidemic in Karnal, United Provinces, India, 80 per cent of persons not treated died, and 21 per cent of those given sulfathiazole. It was found that with sulfonamide therapy the prognosis is good if treatment is begun on the first day of illness and is continued for a week to ten days without interruption. Fatalities invariably were due to beginning the treatment late and to incomplete or interrupted treatment. In primary bubonic plague, with appropriate sulfonamide therapy undertaken at the onset of the disease, the prognosis is excellent. Vaccinated persons who are exposed and acquire the disease may not survive if they are not adequately treated.

10. *Penicillin Therapy.*—Penicillin has proved to be specific for the common tropical spirochetal diseases, yaws (frambesia), pinta and relapsing fever, as well as leptospirosis. It thus provides a valuable alternative for the treatment of persons whose disease is arsenic-fast or who cannot tolerate arsenic. This antibiotic is also valuable as an adjuvant in combating certain complications in the typhus group of diseases, when sulfonamide compounds are contraindicated because they neutralize the action of para-aminobenzoic acid. Finally, penicillin has been found useful in reducing certain intestinal bacteria and in indirectly simplifying the treatment of amebic colitis.

Penicillin is not specifically effective in human or avian malaria, amebiasis, bacillary dysentery, cholera, plague, the typhus group of diseases, leishmaniasis, trypanosomiasis or helminthic infections.

INSECTICIDES AND REPELLENTS; RATICIDES

Insecticides.—With the outbreak of World War II the military needs for dependable insecticides pyramided to fantastic proportions. In medical entomology there was need for larvicides to control the breeding of malarial, filarial, dengue and yellow fever mosquitoes, as well as to combat louse infestation. Oiling of breeding places and treatment with paris green were moderately effective in controlling mosquito breeding, and pyrethrum sprays were relatively satisfactory in killing adult mosquitoes. The pyrethrum aerosol bomb provided definite improvement in the use of pyrethrum for individual use in military groups stationed in highly endemic areas of malaria. Then supplies of pyrethrum from the Near East and Japan were cut off. Fortunately a German insecticide with a Swiss patent, which was originally designed for agricultural entomology, was found to be highly effective in killing larval and adult mosquitoes, filth flies and body lice, and relatively helpful in reducing exposure to diseases transmitted by fleas and ticks. This chemical is dichlorodiphenyltrichloroethane, familiarly known as DDT. Once its usefulness for the control of arthropods of medical importance had become established it was manufactured in the United States by the millions of pounds.

DDT has been an important agent in reducing malaria among troops in the Southwest and Western Pacific theaters; in reducing the hazard of enteric diseases which are carried by filth flies, as in Manila after American reoccupation, and in bringing to a rapid termination mass epidemics of typhus and of louse-borne relapsing fever which threatened the civilian populations of Naples and other cities in the Mediterranean area. More recently DDT has been demonstrated to be rapidly lethal to adult sandflies, thus providing a practical method for eliminating exposure to kala-azar, Oriental sore, espundia, bartonellosis and sandfly fever. Its effect is on the peripheral nerve endings of insects which make direct surface contact with it. If ordinary precautions are taken, DDT is relatively harmless to higher animals and human beings.

Even more effective insecticides will soon be commercially available. These include dichlorodiphenyldichloroethane (TDE) (Rhothane), which is not more than one fourth as toxic to warm-blooded animals as is DDT but is more toxic, on immediate contact, to mosquito larvae and has more prolonged effect; and beta-butoxy-betá-thiocyano-diethyl ether (Lethane 384), which is safe and highly effective for household disinfestation against mosquitoes, flies, fleas, cockroaches, bedbugs, clothes moths and weevils.

Repellents.—Dimethyl phthalate has been developed for rubbing on exposed skin to repel mosquitoes. It produces no dermatitis and its action lasts for several hours. Dimethyl phthalate, dibutyl phthalate and particularly benzyl benzoate have been emulsified in various detergents to impregnate clothing, so as to prevent infestation with chiggers which transmit scrub typhus and to reduce the hazard of invasion of the skin with the cercariae of Schistosoma when one is wading in infested water in endemic areas. After several washings with strong laundry soap benzyl benzoate impregnation will retain its repellent action for mites and its lethal action for schistosome cercariae. This same drug has been demonstrated to be effective in the treatment of scabies.

Raticide.—Sodium fluoroacetate has been field tested and found to be highly poisonous to rats when mixed with bait to which domestic and wharf rats have access. It is reported to be superior to red squill, barium carbonate, thallium sulfate and arsenic trioxide, but is highly toxic for domestic animals and man.

SUMMARY

Since 1939 important developments have taken place in the field of tropical medicine. This has resulted in part from accelerated commercial contact with tropical countries but is due in an even greater degree to military needs of World War II. Much has been learned about the pathogenesis of disease, particularly Bancroft's filariasis, schistosomiasis, scrub typhus, Bullis fever and sandfly fever. Valued aids have been perfected for the diagnosis of schistosomiasis, filariasis, the typhus group of diseases, amebiasis, bartonellosis, kala-azar, oriental sore, espundia and Chagas' disease. Effective immunization has been developed for typhus, while plague and cholera vaccines have been improved. Protective vaccines for scrub typhus, dengue and possibly sandfly fever may soon be developed.

In the realm of therapy the claims for quinacrine hydrochloride as a good antimalarial have been amply demonstrated. This drug is not only the equal of quinine in the treatment of clinical malaria but has proved to be highly satisfactory as a suppressive agent. Of the thousands of natural and synthetic substances which have been tested as potential plasmodicides, two, chloroquine (7-chloro-4-[4-diethylamino-1-methylbutylamino] quinoline) and paludrine (N_1-para-chlorophenyl-N_5-isopropylbiguanide actetate) will soon be available commercially. Both of these promise to be superior to quinacrine. Solustibosan (sodium antimonyl gluconate) and Stilbamidine (4,4′-diamidino stilbene) are new drugs which are effective in the treatment of kala-azar. Suramin sodium (Naphuride; Bayer 205) has been found useful as a prophylactic in African sleeping sickness. No new amebicidal drug has been developed since 1936, when diodoquin was introduced. While antimony and potassium tartrate is still the best available therapeutic drug for schistosomiasis, experimental studies indicate the possibility that another antimonial and certain amino-anthraquinones and phenothiazines have more specific action against schistosomes. No eminently satisfactory treatment has been developed for filariasis and no new drugs have been discovered for the intestinal helminthiases.

Para-aminobenzoic acid has proved to be relatively specific in the treatment of the typhus group of diseases, while sulfonamide drugs have been found to be useful in bacillary dysentery and plague, and 100 per cent effective in cholera when administered together with plasma. Penicillin is specific in yaws, pinta, relapsing fever and leptospirosis.

On the preventive side the discovery that DDT is an effective insecticide against mosquitoes, filth flies, lice and other arthropod transmitters of diseases has made possible the rapid control of malaria, filariasis, dengue, enteric diseases transmitted by filth flies, and typhus and relapsing fever contracted as a result of louse infestation. New, more powerful insecticides are on the horizon. Dimethyl phthalate, dibutyl phthalate and benzyl benzoate have proved to be highly effective repellents in warding off mosquito-transmitted diseases, and when impregnated in clothing greatly reduce exposure to scrub typhus and schistosomiasis. Finally, sodium fluoroacetate has been demonstrated to be superior to other poisons for eradicating domestic and wharf rats.

INFECTIOUS DISEASE

HOBART A. REIMANN, M.D.
Philadelphia

Needless to say, most of what is new in the treatment of infectious diseases revolves about antibiotic agents. So rapid has progress been made that sulfonamide compounds are now regarded as old fashioned in the treatment of certain diseases and immune serums are nearly obsolete. Not only are the benefits of penicillin and sulfonamide compounds reflected in the great reduction of the morbidity and mortality rates of diseases caused by bacteria sensitive to these agents, but there has also been a decline in the mortality of degenerative diseases due to the control of intercurrent infections. It is safe to predict a further decline in the years to come in the incidence of chronic cardiovascular-renal and other degenerative diseases which often originate from or are incited by infections, particularly those caused by hemolytic streptococci.

There is, unfortunately, an obverse side to a medal. It has been estimated that 80 per cent of penicillin is now wasted for the following reasons: (1) It is used for diseases in which it is known to have no effect; (2) fever is often the only indication for its use; (3) dosage is often either too small or too interrupted, or too large or given longer than is needed; (4) oral therapy requires two to four times the amount needed for parenteral therapy, and (5) it is used as a prophylactic too often in the absence of evidence of its usefulness for this purpose. While these abuses are not in themselves serious except for occasional untoward effects, economic waste and their contribution to repeated recent shortages, a possible far more serious aspect must be considered. It has been predicted that the widespread use of penicillin will gradually induce penicillin-resistant bacteria to arise which after several years will cancel its curative effect. This has already occurred among certain hemolytic streptococci and gonococci as regards sulfonamide therapy and prophylaxis. Another seldom discussed problem of wide social implication is the moral effect of the knowledge that certain venereal diseases can be easily cured. It is also hoped that physicians will resist the commercial exploitation of penicillin under various proprietary names and in various unnecessary vehicles.

The greatest success of penicillin therapy has been attained in the treatment of infection caused by pneumococci, streptococci, staphylococci, gonococci and meningococci. It is of value in the treatment of early syphilis, but further study is needed before the eventual outcome can be judged. At present, parenteral, oral and topical routes of therapy are fairly well understood and are preferred. Until further experience has accrued, intrathecal therapy and the inhalation of nebulized penicillin must be regarded as in the experimental stage. It is now known that commercial penicillin is not a single substance but a mixture of at least four substances, called G, X, F and K. Since some are more active than others, intensive research is under way to provide a product containing constant amounts of the effective fractions.

Streptomycin has not given the good results at first expected from it. Although it is theoretically specific for typhoid and brucellosis, actual experience has been discouraging. It is of value in the treatment of patients with tularemia, with certain infections caused by Pfeiffer's bacilli, or with certain infections of the urinary tract, and to clear the bowel temporarily of streptomycin-sensitive bacteria. Studies of its effects on tuberculosis, plague and other diseases are not advanced enough to draw conclusions. Various strains of bacteria, even of those of a single species, vary greatly in their resistance to streptomycin, and in some instances sensitive strains develop resistance with great rapidity.

Further studies on the therapy of acute rheumatic fever casts doubt on the value of massive doses of salicylate drugs recently recommended. Large dosage often causes toxic effects and even fatal results without influencing the actual infection more than the dosages of 8 to 12 Gm. daily, as heretofore used. Evidence of infection may even develop during therapy. Symptomatic relief is the most that can be expected.

Many other new developments in the field of infectious diseases pertaining to aspects other than therapy are discussed elsewhere.[1] Progress in the treatment of arthritis, exotic diseases and in infections caused by viruses is discussed by other members of this panel.

GASTROENTEROLOGY

WALTER C. ALVAREZ, M.D.
Rochester, Minn.

Probably the most interesting question in the minds of gastroenterologists today is whether double vagotomy well above the cardia, with or without gastroenterostomy or partial gastric resection, constitutes the long looked-for perfect operation for peptic ulcer.

Whatever happens, the medical profession will long owe Lester Dragstedt a debt of gratitude for having given this operation a good trial. This required courage, because the results of cutting both vagus nerves in animals and one vagus nerve in man had not been encouraging to those who wished to use this procedure in the treatment of peptic ulcer.

In the last three years some two hundred double vagotomies have been performed, and in almost all cases so far reported the results have been encouraging. Usually the pain and discomfort have promptly stopped, and the ulcer has apparently healed. I have heard of only 1 case in which the pain continued unchanged, and it may be that in that case the nerves were not all cut. Apparently if only a few fibers are left—and they can easily be left—the results can be nil.

It is hard to say why the good results are obtained so promptly and consistently, because in a considerable percentage of cases the gastric acidity is not done away with and in some it has not even been altered. In other cases in which it was at first diminished it soon returned to normal or above. Apparently the particularly harmful night secretion is usually diminished in amount. In most cases the gastric glands continue to respond normally to stimulation by histamine.

It is hard to say why the pain goes so promptly. The fact that in a few cases the putting into the stomach of some 0.5 per cent solution of hydrochloric acid no longer caused pain suggested some diminution in sensitivity of the mucosa, but the fact that the blowing up of a balloon in the esophagus or stomach or duodenum still produced pain and the fact that an intestinal obstruction after vagotomy caused much pain showed, as was to be expected, that the sensory pathways had not been interrupted. After the operation hunger and nausea can still be felt and the gallbladder continues to function normally. The patients tend to gain in weight.

All this is most encouraging. The questions that most need answers are whether the operation is safe, whether there are any serious drawbacks or contraindications and whether the good results will be permanent.

The main difficulty encountered so far, as reported by a number of observers at the May meeting of the American Gastro-Enterologic Association, is the failure of the stomach to empty properly after the operation. A six hour retention of all food and even failures to empty in twenty-four hours are common. Because of this, surgical interns are sometimes kept busy washing out a patient's stomach, and in some cases the surgeon has felt compelled to operate again and perform gastroenterostomy. In some cases at reoperation a dilated paralytic segment of bowel has been found. As yet no drugs have been found which will relieve this stasis. Naturally, the patient often feels full, but the fact that he gains in weight shows that eventually the food goes through into the bowel. Most patients are troubled for a while by diarrhea, but in most cases it soon disappears. This symptom may be associated with distress in the lower part of the abdomen.

A big simplification in the technic of the operation was made by Dragstedt when he found that he could cut the cardia away from the diaphragmatic hiatus, pull down the esophagus, cut the vagi and then, after letting the esophagus slip back up, sew the edges of the hiatus close to the cardia again.

Certainly every one will watch the results of this new operation with great interest. Perhaps it does what is so much needed in cases of ulcer, and that is to interrupt pathways which carry to the upper part of the digestive tract harmful influences that arise in the brain.

Every war brings to the fore a new disease, and in World War II this was infectious hepatitis. It occurred in epidemics and caused much disability. It appears to be produced by two viruses which unfortunately are highly resistant to disinfecting agents. The period of incubation is remarkably long—in one type of case from twenty to thirty-five days, in another type from sixty to one hundred and twenty days. Partly as a result of this long period of incubation and partly because of the existence of carriers many men got the disease by means of a transfusion or even when a contaminated hypodermic needle was used. Some epidemics were caused by a water-borne virus. If only because of the frequency with which transfusions are now given, we physicians will probably long be plagued by epidemic hepatitis.

Perhaps for a while we shall do well to study the function of the liver in puzzling cases of indigestion and especially those in which there is much soreness and aching in the right upper quadrant of the abdomen.

The situation in regard to gastritis seems to be clarifying, and there is now less excitement about the superficial and atrophic types. Some authorities are pointing out that many of the minor changes seen in the mucosa may be transient and unimportant, like those seen in Alexis St. Martin and in Tom who was studied by Wolf and Wolff. The atrophic type probably often is not a gastritis in the sense that "itis" means inflammation.

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[1] Reimann, H. A.: Infectious Diseases: Twelfth Annual Review of Significant Publications, Arch. Int. Med. 78: 447-494 (Oct.) 1946.

From the Mayo Clinic.

ENDOCRINOLOGY

EDWARD H. RYNEARSON, M.D.
Rochester, Minn.

The best summary of the advances in endocrinology which I have seen is the booklet entitled "Exhibit on Endocrine Products." The booklet can be obtained by writing to the Council on Pharmacy and Chemistry of the American Medical Association. Dr. Austin Smith and Dr. Walton Van Winkle are to be commended for their fine work on this booklet, and particularly for their listing of all accepted brands of commercially available hormones. In this small booklet the authors were unable to go into much detail. Not every physician will agree with every statement; most physicians, however, will agree with the conservative point of view.

THYROID

Two of the recent advances pertain to the thyroid. One is the use of goitrogens, such as thiouracil and propylthiouracil, which were described by Astwood and VanderLaan and by Williams and others. The exhibit regarding the effect of goitrogens by Dr. Elmer Bartels, which has been awarded the silver medal, summarizes the present knowledge of these substances. The other advance pertains to the use of radioactive iodine. In a recent issue of The Journal of the American Medical Association, articles by Hertz and Roberts and Chapman and Evans and an editorial present up-to-date information on the use of radioactive iodine. These workers report results obtained from the use of radioactive iodine prepared in the laboratories of the Massachusetts Institute of Technology. Concurrently, studies have been carried out in California by Hamilton and Soley and their associates using material prepared in the cyclotron of the University of California by Lawrence. Reports involving patients have not been published by the Western group. It is far too early to define the uses and limitations of treatment with this substance. Whether it is a medical cure for hyperthyroidism cannot be stated at this time. What effect it will have on the parathyroid glands and what later effects, such as the development of myxedema or carcinoma, may be observed are not known.

PARATHYROID GLANDS

The medical profession continues to be indebted to Dr. Fuller Albright and his associates for its knowledge of hyperparathyroidism. The importance of methods for the earlier diagnosis of this condition have been emphasized recently by Keating and Cook. If physicians can diagnose hyperparathyroidism before serious damage is done to the kidneys, bones and other parts of the body, then, after successful operation, these patients may be saved from the devastating effects of this condition. No new methods of treatment of parathyroid insufficiency have been introduced.

ADRENAL CORTEX

The treatment of Addison's disease continues to be less than satisfactory. Commercial firms have made available extracts of the whole adrenal cortex and have provided a synthetic fraction, desoxycorticosterone acetate. These two types of substances have improved the prognosis of Addison's disease but what we, as physicians, most desire in treatment of this condition is better and more potent whole adrenal cortical extracts and other synthetic fractions. Desoxycorticosterone acetate has a definite effect on the retention of salt and water but does not constitute complete replacement therapy for Addison's disease. The present treatment for Addison's disease, especially treatment with whole adrenal extracts, is far too expensive for most patients.

Results of treatment of Cushing's syndrome, whether it is caused by a basophilic adenoma of the pituitary or by hyperplasia of the adrenal cortex, continue to be extremely discouraging. The somewhat comparable condition produced by a tumor of the adrenal cortex or by arrhenoblastoma of the ovary responds well to surgical treatment provided metastasis has not occurred.

ADRENAL MEDULLA

An important new advance is the use of histamine in the diagnosis of pheochromocytoma. Roth and Kvale have found that an injection of a given amount of histamine will produce an attack of paroxysmal hypertension if a tumor is present.

PANCREAS

The use of alloxan or of the diabetogenic hormone of the pituitary for production of diabetes in experimental animals has given scientists another opportunity to explore the etiology and pathology of diabetes.

ESTROGENS, ANDROGENS, PROGESTERONE AND PREGNENOLONE

The list of estrogens available for clinical use fills two pages of the booklet mentioned at the beginning of this summary. They certainly have helped many patients who need estrogenic therapy, but physicians have improperly used estrogens, as well as androgens, in many instances. The title of the paper by Dr. Willard Thompson, at this meeting, "The Uses and Abuses of Male Hormone," was indeed well chosen. Estrogens and androgens are of greatest use for treatment of patients whose conditions are caused by a lack of these hormones. Mention should be made of the use of estrogens in the treatment of carcinoma of the prostate and the use of androgens in treatment of inoperable carcinoma of the breast. The early enthusiasm regarding the use of progesterone is being supplanted by more cautious statements in the literature. A new steroid, pregnenolone, may prove important. Its uses have not been clearly defined, but Pincus, Hoagland and their associates have described its use in preventing fatigue. Unquestionably, these hormones are important, but results of their use need to be evaluated more carefully.

GONADOTROPINS

Physicians are in general agreement that cryptorchism will respond to the use of gonadotropins in certain cases. Competent observers agree that when gonadotropins are administered the testes will descend into the scrotum in those boys whose testes would enter the scrotum later if the injections were not given. Many of these observers think that effecting descent of the testes into the scrotum prior to puberty is of some advantage and also that gonadotropins make operation easier in case the descent is not complete with hormonal treatment. I believe that it is unfortunate that gonadotropins are being used in a large number of other poorly defined conditions. More unfortunately, too few clinical studies contain adequate observation of control groups. If investigators in the field of basic medical science are impressed with the importance of adequate control studies, it seems that it would be wise

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From the Division of Medicine, Mayo Clinic.

clinicians also to make control studies of patients. New hormone fractions cannot be evaluated properly unless these studies are made.

PREPARATIONS OF THE ANTERIOR LOBE OF THE PITUITARY GLAND

I know that this audience joins in offering congratulations to Dr. Herbert Evans and his associates for receiving the gold medal for their exhibit on the fundamental aspects of the anterior lobe of the pituitary gland.

At this time, there is not generally accepted evidence that any commercially produced extract of this substance has proved of value in the treatment of human beings. Pure fractions of the anterior lobe of the pituitary gland have been produced which, in animals, have proved effective. It is to be hoped that in the future such extracts may be available for treatment of human beings. Physicians agree almost unanimously that products of the anterior lobe of the pituitary gland prepared for oral administration are totally worthless.

COMMENT

Finally, it does not seem out of place to comment that the best information regarding endocrinology is available in scientific journals, such as the *Journal of Endocrinology* and the *Journal of Clinical Endocrinology*. It is not unfair to state that pharmaceutic houses are primarily interested in the sale of their products and that statements appearing in their publications are not always accepted by members of the research departments of the same firms. It should be added that physicians should not be misled by overly enthusiastic writers for lay publications or by unscientific claims of pseudopharmaceutic firms. Nevertheless, members of the medical profession are greatly indebted to the reliable pharmaceutic firms for their aid.

CARDIOVASCULAR DISEASE

WILLIAM J. KERR, M.D.
San Francisco

Some of the most noteworthy advances in the treatment of cardiovascular disease have been made by surgeons in what was formerly considered a hopeless field —congenital heart disease. Patent ductus arteriosus, when attacked at an early age by surgeons of skill, has been removed as a later hazard to life from heart failure or infectious endarteritis. Coarctation of the aorta has likewise responded to skilful hands through resection of the narrow segment followed by end to end anastomosis. The condition of children with the tetralogy of Fallot and some other congenital lesions accompanied by cyanosis has been improved, at least temporarily, by anastomosing a branch of the aorta to the pulmonary artery. Although symptoms may be temporarily abolished, the fistulous tract may present a later hazard. Furthermore, the pulmonary stenosis is not corrected by this procedure. Better results might be achieved by a plastic operation on the pulmonary valve and conus at the site of the stenosis. During the war several surgeons have had unusual opportunities to treat patients in the younger age group with arteriovenous fistulas. The results have been notable. In civil life many patients with such lesions may be older, with more brittle vessels, so that there may be fewer successes.

SYMPATHECTOMY FOR HYPERTENSION

Recently interest has been shown in sympathectomy for hypertension. Many such operations have been performed by skilled surgeons, and in some quarters all comers are accepted for treatment. Surgeons still do not know how to select patients who may be expected to benefit by the procedure, which is a major operation with some undesirable after-effects. The percentage of beneficial results is about the same as after the use of other methods employed with equal enthusiasm and diligence. Hypertension by itself does not often give symptoms until the subject is aware of his high blood pressure, and he is generally relieved of his symptoms of anxiety after such operations or after any method of treatment carrying an impact of suggestion. One must raise the question whether sympathectomy is not another example of the mastery of technic over reason and whether it will not soon fall into discard along with sympathectomy and thyroidectomy for heart disease.

PROTRACTED EDEMA

Among the recent medical advances is the recognition of the great value of an extremely low sodium intake in the treatment of protracted edema. Whether fluids should be forced in addition may be open to question, but if left to their own devices such patients will take less fluid voluntarily and will not suffer from thirst as under former methods. The posture of the patient with dependent edema or anasarca is of great importance. It is better to put the edematous and orthopneic patient in a comfortable chair with support for the shoulder girdle than to force him to remain in a cramped position in bed. Soggy feet are better than soggy lungs.

CORONARY OCCLUSION

Anticoagulants are being recommended for patients with coronary occlusion. If they are to be used they should probably be instituted within the first forty-eight hours. At present Dicumarol (3,3′-methylene-bis-[4-hydroxycoumarin]) would appear to be the most suitable anticoagulant, but it should be used only under the most careful laboratory control. Thrombosis and pulmonary embolism from clots in peripheral veins may likewise be controlled by the proper use of anticoagulants. The wholesale ligation of veins, including on occasion the inferior vena cava, as a prophylactic measure, would not seem to be a reasonable procedure.

There has been an increasing appreciation of the value of intravenous administration of morphine in doses of ⅛ to ⅙ grain (8.1 to 10.8 mg.) for pain in coronary occlusion. I am convinced that the protracted pain is of major importance in causing the state of shock, which in itself may extend the zone of damage of the infarcted area. Perhaps more attention to treatment of shock by the usual or acceptable methods may be of additional value.

The treatment of angina pectoris by methods which promote the return of blood to the heart is at present the only rational approach to the problem. When the members of the medical profession understand how to use such methods many lives will be spared and many useful years will be added.

Purified glucosides of digitalis have all but eliminated the uncertain methods of standardization formerly in use.

RHEUMATIC FEVER

Salicylates have been employed in large doses recently in the treatment of rheumatic fever. The symptoms have been mitigated by this method, but convincing proof is lacking that the cardiac damage has been lessened. It may be worthy of note that salicylates were given in large doses thirty years ago in the Massachusetts General Hospital and other hospitals without apparently modifying the degree of cardiac involvement. The value of sulfonamide drugs in preventing recurrences of rheumatic fever is not determined, but they would appear to be useful when given continuously in small doses. The questions of sensitization to the drugs and fastness of organisms are not yet answered, but I should think that these risks should be taken in view of the dangers of repeated insults to the heart.

The medical profession is approaching a solution to the etiology of rheumatic fever, and when the constitutional factors are better understood one should expect to terminate an attack in being or to interrupt the process before the biologic trap has been sprung and after the organism (streptococcus) has baited it.

VIRUS DISEASES

EDWIN W. SCHULTZ, M.D.
Stanford University, Calif.

In contrast with recent advances in antibacterial therapy, specific measures are available for few virus diseases. This cannot be laid to lack of research in this field, since many potential agents have been tested for their possible antiviral activity. Probably the most important factor responsible for this situation is the distinctive host-parasite relationship in virus infections, which has added greatly to the problem of dealing with this group of infectious agents. In bacterial infections the relationship of the agent is primarily an intercellular one, with the parasite exposed not only to the antimicrobic substances which the host may build up but to agents artificially introduced into the blood or taken up by the blood from the digestive tract. In virus infections the relationship is intracellular, with the virus quite out of reach of potential therapeutic agents brought to the infected area. Moreover, the initial invasion may be extensive and involve many cells simultaneously, so that by the time symptoms of infection appear little opportunity remains to change the natural course of the disease. Agents the effects of which depend on a direct action on the virus could be effective only while the virus is on its way from one cell to another. Such a successive invasion of cells might conceivably be prominent enough in individual virus diseases to afford some opportunities for a direct attack, and one would expect opportunities to be greater in those diseases known to be associated with a viremia or a blood phase. It is known, of course, that the use of immune serum early in measles serves to modify its clinical course, but this is one of the few virus diseases in which the value of immune serum is generally recognized. Even here it must be given early in the disease to be effective. Theoretically, then, the chances of limiting a virus infection with antiviral agents would seem to be small and limited to the few opportunities which may exist of "picking off" the virus particles while they are in transit from one cell to another. This applies also to antibodies, since immune globulins are generally held to be much too large to enter tissue cells. This view is supported by the results of serum therapy in virus diseases in general.

However, while the prospects of ultimately finding specific therapeutic measures against individual virus diseases are not bright, there is some ground for continued optimism. It is possible, for example, to point to the effective use of chemotherapeutic agents in two or three virus diseases, in spite of this intracellular relationship. Favorable results have been obtained with the sulfonamide compounds in trachoma, inclusion blennorrhea and lymphogranuloma inguinale, while penicillin has recently been observed to exercise some therapeutic effect in experimental ornithosis and psittacosis. All the viruses associated with these diseases are large viruses, and morphologically distinctive, in that they are rickettsia-like. They are nevertheless intracellular in their relationship to the host. Rickettsias also are intracellular parasites. In spite of this, therapeutic effects have been obtained with penicillin in experimental murine typhus. Encouraging results have also been obtained with para-aminobenzoic acid in certain rickettsial infections. It would appear, therefore, that an intracellular relationship in itself does not wholly preclude a possible solution of the problem of how to reach virus already sheltered within infected cells.

It is possible that the true solution will have to be found in a way which does not involve direct action on the virus, but which involves indirect action by some means which will render the protoplasmic soil of normally susceptible cells unsuitable for the multiplication of a given virus. Poorly nourished animals have been observed to be less satisfactory for experimental work on certain virus diseases than well nourished ones. Thiamine deficiency has been observed to result in some increase in resistance to experimental poliomyelitis in mice. It is known that robust health cannot be counted on to afford added protection to a person who is naturally, or genetically, susceptible to a given virus infection. There is obviously something about his protoplasm which favors the implantation and multiplication of a given virus. Why his cells afford a protoplasmic soil suitable for the multiplication of a virus and the cells of another species contain a protoplasm which is barren for this same virus is a question which all physicians should like answered. The latter state might conceivably be created artificially, if the answer to this question were known.

There is another aspect to be considered in the treatment of virus diseases, namely, the control of secondary bacterial invasion. There are some virus diseases, such as smallpox and influenza, in which secondary bacterial invasion may add greatly to the weight of the infection. Against this contingency the sulfonamide drugs and the antibiotics are now available and can be drawn on when indicated. Timely immunization against influenza should in itself do much to reduce the incidence of secondary pneumonia, but whatever prediction may be justified along this line, there are now, in addition, these highly effective antibacterial agents with which to deal in this complication. Severe smallpox is not wholly a virus infection, but it is commonly associated with systemic invasion by pyogenic cocci. While there is not any specific measure against the virus itself, it should be possible to do something to combat the secondary bacterial invasion which may add greatly to the weight of a smallpox infection.

While little can be said regarding specific therapy in virus diseases, much could be said regarding recent advances in immunization against them. Because of the host-parasite relationships mentioned, virus diseases must be thought of much more in terms of prevention than of treatment. Many have yielded to immunization. Unlike most bacterial vaccines, viruses are, as a rule, good immunizing antigens. This does not mean that they always create increased resistance when injected as vaccines, especially when injected in an inactive form, since a well defined increase in resistance may depend on more than the mere presence of antibodies in the blood. To induce a definite immunity against certain virus diseases it is obviously necessary to induce a modified infection with living virus, as in vaccination against smallpox. These infections apparently give rise to some protoplasmic change within normally susceptible cells, as well as to formation of antibodies, the former being the more important factor in acquired resistance. Vaccination against yellow fever is carried out with a living modified virus. In general, however, the quest has been for nonviable vaccines of sufficient concentration and immunizing potency to stimulate a good humoral immunity, if nothing more. Such vaccines are possibly more likely to prove effective against infections in which a viremia, or blood phase, precedes the cellular invasion. Among the virus diseases against which active immunity can be established with suspensions of inactivated virus are influenza, equine encephalomyelitis and possibly epidemic encephalitis.

In this brief survey it is necessary to exclude all reference to the many advances which have been made outside of the field of specific therapy and prophylaxis, such as in the electron microscopy of viruses and their cultivation, purification and chemical analyses, and in variations in viruses. It is in these fields that some of the greatest advances have been made. Out of these may eventually come some way of effectively dealing with virus diseases at the bedside.

ARTHRITIS

PHILIP S. HENCH, M.D.
Rochester, Minn.

There are actually about two hundred forms of "rheumatism," including about one hundred different types of arthritis. But approximately 85 per cent of "rheumatic patients" suffer from one of seven common conditions: rheumatoid arthritis, osteoarthritis, the polyarthritis of rheumatic fever, periarticular or intramuscular fibrositis, psychogenic rheumatism, gout or gonorrheal arthritis. This discussion will be confined to five of these common forms.

RHEUMATOID ARTHRITIS

Penicillin.—Because of a supposed relationship between hemolytic streptococci and rheumatoid arthritis it was hoped that penicillin might be of value. This hope has not been realized. Large doses of penicillin have been given intramuscularly daily for from three to six weeks, or orally daily for from one to six months. No significant benefits were noted.

Streptomycin.—Streptomycin has been of no value in the few cases in which its use has been reported.

Neostigmine (Prostigmine); Physostigmine.—Chiefly to relieve painful spasms of the muscles in rheumatoid arthritis neostigmine bromide, orally or subcutaneously, was recently recommended. Later physostigmine salicylate, subcutaneously, was considered superior to neostigmine. The early favorable reports were not sufficiently critical. At the recent meeting of the American Rheumatism Association several experienced rheumatologists expressed their disappointment with this type of treatment and their belief that neostigmine was of little or no value in rheumatoid arthritis. Trommer's point of view was that neostigmine, given orally, is not of value and that neostigmine and physostigmine, given subcutaneously, can be regarded as adjuvants only. He stated, "When articular inflammation has subsided and deformity is due to muscle spasm then prostigmine may help." Recent experiences with soldiers with rheumatoid arthritis at one of the Army's rheumatism centers led Balboni, Hollander and Kydd to conclude that "prostigmine induces no significant relaxation of muscle spasm in rheumatoid arthritis. The slight variations in range of articular motion can be accounted for by the daily variations caused by changes in weather, fatigue or other influences which so commonly make the rheumatic patient better on some days and worse on others. A potent drug such as prostigmine should yield much more definite benefit than we have observed in order to justify its continued use in rheumatoid arthritis."

Antireticular Cytotoxic Serum.—Claims have been made by Bogomoletz and Strazhesko that "rheumatism" is one of the conditions relieved by injection of minute quantities of serum of animals into patients. The serum is generally obtained from rabbits immunized against human reticuloendothelial tissue cells. It is not clear what type or types of "rheumatism" were treated. According to one report Bogomoletz claimed that "in cases of acute arthritis it is a quick and certain cure, but when there is endocarditis application of the serum has a bad effect."

The serum was recently investigated for the British Empire Rheumatism Council by Bach. Results in various rheumatic diseases, including rheumatoid arthritis, were essentially negative. The Empire Rheumatism Council does not recommend its use. When informed of Bach's work Bogomoletz is said to have stated that "the serum is suitable for the cure of rheumatism only in the acute phase of the illness." According to Bach, Strazhesko, a colleague of Bogomoletz, has stated that "in chronic rheumatism (chronic arthritis and endocarditis) the serum should not be used."

Freyberg has completed a preliminary (unpublished) investigation of its use in about 30 cases of rheumatoid arthritis and spondylitis. Results to date have been disappointing. The serum is now being prepared in this country (Wyeth, Incorporated) and is available for further clinical trials.

Vitamins.—Recent studies have led to the following conclusion: "There seems to be no direct indication for the use of vitamin A, vitamin B complex (thiamine hydrochloride, niacin, riboflavin), vitamins C, E, or K in the relief of symptoms of chronic arthritis" (Traeger). I subscribe to this conclusion.

Although a few physicians still consider the use of concentrated doses of vitamin D, including ertron, of some value, the majority of experienced rheumatologists regard it as essentially useless. In some cases a slow moderate improvement (generally only subjective) may be noted, but the results are mainly disappointing. Severe, even fatal toxic reactions may occur; hence some have called the use of large doses of vitamin D for arthritis "a dangerous practice which may do the patient harm."

Gold Salts.—Although chrysotherapy for rheumatoid arthritis has been employed for eighteen years, its exact value is still undetermined. At the recent meeting of the American Rheumatism Association the opinions

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From the Division of Medicine, Mayo Clinic.

expressed concerning chrysotherapy were diverse. The three chief drawbacks to this therapy are as follows: (1) Notable results are obtained in only about 20 to 35 per cent of cases; (2) relapses are common even when good results have been obtained, and (3) toxic reactions are frequent, occasionally serious. Because of these limitations certain physicians have abandoned its use. Other physicians employ gold compounds only when other measures have failed. But many experienced, careful rheumatologists maintain their conviction that chrysotherapy is the best single remedy for rheumatoid arthritis, and they urge that it be instituted as early as possible, preferably within the first two years of disease, rather than late after the disease has become more or less irreversible. According to Cecil, "It is a pernicious doctrine to advocate the use of gold only after everything else has been tried."

Toxic Reactions: Significant, but not necessarily serious, toxic reactions occur in approximately 25 to 30 per cent of cases in which chrysotherapy is employed. Serious toxic reactions occur in about 5 per cent (or less). Fatal toxic reactions occur in from 0.25 to 0.45 per cent of cases. Thus, in three recently reported series deaths occurred in 2 of 460 cases (Ragan and Tyson), in 2 of 500 cases (Boots) and in 2 of 800 or more cases (Cecil). Of recent years the incidence of fatal reactions has been reduced materially (from 3 per cent in 1935). Further experience should lower it still more.

Toxic reactions do not bear a constant relationship to the doses of gold used and may appear early or late during treatment. According to some authorities, they are related more to the duration of the disease than to the amount of gold given: reactions occurred twice as often in cases of ten or more years' duration as in earlier cases. Cutaneous reactions may be mild, or severe as in the exfoliative type. There is no way to detect impending dermatitis: eosinophilia does not necessarily precede it or indicate, when it is present, that dermatitis is impending. Serious reactions which have been fatal include thrombopenic purpura, aplastic anemia, acute glomerular nephritis, toxic hepatitis, agranulocytosis and acute enterocolitis. Agranulocytosis can now be controlled if penicillin is given promptly. According to Cecil, vitamin K and transfusions may be inadequate to control hemorrhagic purpura resulting from gold; in his hands splenectomy has been a lifesaving measure. There is no known method of preventing toxic reactions, but their early discovery and control demand constant vigilance and frequent (perhaps weekly) examination of the patient's skin, blood and urine. "When these rules are faithfully followed, gold therapy can be used with a fair degree of safety" (Cecil).

Results: Considerable benefit in the majority of cases was reported by Cecil. Ragan and Tyson, in a follow-up study of 142 cases for three or four years, noted "marked objective improvement" in 35 per cent (50 cases); a "five year cure" was obtained in 9 (6 per cent) of the 142 cases. But the term "cure" is less appropriate than "complete remission."

Other American rheumatologists who have been less impressed by chrysotherapy have observed notable improvement in only 20 per cent and "arrests" in only 15 per cent of their cases. They observed great improvement only rarely and emphasized that those who report the best results are treating early rheumatoid arthritis; in early cases many remedies much less toxic than gold reputedly give notable results. Steinbrocker stated that too often advocates of chrysotherapy report "wishful statistics" and lump together patients "cured or improved" to make an impressive showing.

Relapses: When injections of gold are given by the course and then discontinued, the rate of relapse is high: from 50 to 80 per cent. Relapses often occur because of the necessity of the patient to return to fairly strenuous physical work. In 75 per cent of the cases of Ragan and Tyson (in which the course method was used) relapses occurred within one to fifty-eight months after injections were stopped. Although patients may receive further benefit from more gold, the results from a second course are not likely to be as good as from the first. Relapses were noted to occur just as often among early as among late cases.

Newer Plan of Dosage: Because gold salts accumulate notably in bodily tissues when weekly doses of 100 mg. are given, and in order to reduce toxicity, the current trend is to use smaller doses than formerly, generally with a maximal weekly dose of 50 mg. (25 mg. in cases of mild disease). One or two weekly doses of 10 mg. each are given, then one or two of 25 mg., and thereafter 50 mg. weekly. To reduce the tendency for relapses many rheumatologists no longer give courses of treatment and stop treatment after 1 or 1.5 Gm. has been given but continue weekly doses of 50 mg. until the patient's symptoms are relieved and the sedimentation rate returns to normal. Thereafter "maintenance doses" are given indefinitely, 50 mg. once every two, later every three or four weeks. If no definite relief is noted after five or six months of treatment or after about 2 Gm. has been given, further chrysotherapy is generally useless.

Conclusions Regarding Chrysotherapy: Obviously chrysotherapy is "still on trial," but its protagonists contend that arsenotherapy for syphilis was likewise on trial for several years until satisfactory methods of administration were finally developed. Some neutral observers have stated that the advocates of chrysotherapy are waging an uphill, losing fight. Bauer, who has concluded that his results from older methods of treatment are as good or better than from gold, expects the use of gold salts to be abandoned in the not too distant future even though no striking new substitute is forthcoming. Advocates of chrysotherapy admit that this remedy should not be relied on exclusively and that other general measures (rest, removal of foci, nutritious diet, physical therapy) should supplement it. In view of its hazards chrysotherapy should be used only by physicians familiar with, or willing to familiarize themselves with, the details required for adequate control, by physicians with hospital and laboratory facilities and by those willing to carry out repeatedly the necessary clinical and laboratory precautions. In view of the serious potentialities of rheumatoid arthritis, I believe that chrysotherapy is justified whenever rheumatoid arthritis has lasted more than a few months and shows evidences of being progressive, provided that the patient understands and is willing to share the risks.

RHEUMATOID SPONDYLITIS

Roentgen Therapy.—Although roentgen therapy in cases of peripheral rheumatoid arthritis has been generally disappointing, it has been reputedly of considerable value in cases of rheumatoid (ankylosing) spondylitis. Of 52 patients treated by Smyth, Freyberg and Lampe in 1941, notable subjective improvement was obtained in 72 per cent and impressive objective improvement in 50 per cent. To rule out a psychic effect other patients were given "placebo therapy" (they were placed on the roentgen therapy table; a lead screen was used to block the roentgen rays); no patient was notably improved.

The more recent experiences of Freyberg have confirmed these earlier results. This work has recently been further confirmed and extended by Smith, Boland, Shebesta and Hench, who treated 25 spondylitic soldiers with roentgen therapy alone, 25 with placebo therapy alone in the manner described (lead screen being used) and 25 with deep breathing and postural exercises alone. The patients were observed in an army hospital for at least one hundred and eighty days. Of those who received roentgen therapy subjective improvement was moderate in 56 per cent and pronounced in 36 per cent (total 92); objective improvement was moderate in 60 per cent and pronounced in 8 per cent (total 68). Of those given psychotherapy, who went through the ritual as for roentgen therapy but received no radiation, subjective improvement was moderate in 28 per cent and pronounced in 9 per cent (total 37); objective improvement was moderate in 8 per cent, pronounced in none. Of those given breathing and postural exercise alone subjective improvement was moderate in 40 per cent and pronounced in 8 per cent (total 48); objective improvement was moderate in 32 per cent and pronounced in 8 per cent (total 40). These results are notably in favor of roentgen therapy. Thereafter all patients received whatever treatment they had previously missed. The combined program of therapy was superior to any one alone.

OSTEOARTHRITIS

Although cup arthroplasties have been performed frequently on osteoarthritic hips since Smith-Petersen developed the procedure in 1939, studies on end results have been few. Recently reported were the results obtained at the Mayo Clinic in a series of 91 cases, 27 of which were cases of osteoarthritis, sometimes of the primary (idiopathic, senile) type, but generally of the type secondary to congenital anomalies, Legg-Perthes' disease, and so forth.

Results eight months to five years after operation in these 27 cases were as follows: In 15 per cent results were very good: The patient was able to walk without support and had good motion of the hip with no noticeable limp or pain. In 30 per cent results were good: pain was absent or minimal and the patient was able to walk well not only on the level but up and down stairs, although at times a cane was required. In the remaining 55 per cent, results were only fair or poor. Results were better among men than among women. Vitallium cups were superior to lucite cups.

Indications for Operation.—According to Ghormley cup arthroplasty is recommended, not for hips that are merely painful, but in cases in which pain is associated with considerable limitation of motion. It is not recommended for patients more than 60 years of age.

RHEUMATIC FEVER

Salicylates: Oral Versus Intravenous Administration.—Three years ago Coburn recommended that salicylates be given in large doses intravenously rather than orally and claimed that thereby the duration of the acute febrile polyarthritis and other features of acute rheumatic fever were shortened and the incidence of valvular heart disease was notably reduced. In the main this work has not been confirmed. Several recent reports have indicated that in general the intravenous administration of salicylates has no superiority over the oral administration. No differences were noted in the time necessary for articular pains to disappear or for sedimentation rates to become normal, in the incidence of polycyclic attacks, in the tendency for preexisting cardiac damage to progress or in the development of new cardiac involvement. Serious toxic, even fatal, reactions have occasionally resulted from such therapy.

Sulfonamide Prophylaxis.—The prolonged administration daily of sulfonamide compounds to patients, particularly children, who have previously had rheumatic fever has notably reduced the incidence of subsequent rheumatic attacks as well as the death rate from rheumatic carditis. Rosenberg and I recently summarized the seventeen studies of this form of treatment so far reported from ten different clinics, covering an experience of ten years. Among the rheumatic patients protected by sulfonamide compounds for one thousand and thirty-seven seasons, only 22 acute rheumatic exacerbations occurred, an incidence of 2.2 per cent, and only 3 patients died from rheumatic fever. But among the rheumatic patients who did not receive sulfonamide compounds during one thousand three hundred and forty seasons, there were six times as many recurrences (183 acute attacks, an incidence of 13.7 per cent) and almost twice as many deaths (5 deaths to date) as among those who received sulfonamide compounds for prophylaxis. Hence such prophylaxis appears to represent a really important medical advance. Toxic reactions were generally mild; the risks inherent in such chemoprophylaxis were considerably less than those from the disease not so treated.

GONORRHEAL ARTHRITIS

Falling Incidence.—Gonorrheal arthritis seems to be disappearing. Prior to the introduction of sulfonamide compounds it complicated 2 to 5 per cent of cases of gonorrhea. But during the war the incidence of gonorrheal arthritis among certain groups of soldiers with gonorrhea was only 0.1 to 0.3 per cent. Listed annually in the *Quarterly Cumulative Index Medicus* between 1930 and 1940 were an average of thirty-four articles on gonorrheal arthritis; in the past five years an average of only eight articles thereon has been listed annually. The incidence of gonorrheal arthritis per hundred thousand admissions to the Mayo Clinic has fallen from 45 in 1937 to 2 in 1945. This falling incidence constitutes one of the triumphs of chemotherapy, primarily with sulfonamide compounds. In view of this success the prompt recognition of gonorrheal arthritis is all the more important, because if it is treated promptly it is generally cured quickly and dramatically, whereas unrecognized gonorrheal arthritis can damage a joint seriously in a fairly short time.

Current Ineffectiveness of Sulfonamide Compounds.—Until recently sulfonamide compounds were effective against gonorrhea and gonorrheal arthritis in a high percentage of cases, but the sulfonamide-susceptible strains of gonococci have now largely been killed off in the United States, leaving mostly the sulfonamide-resistant strains to be combated. Hence the incidence of failures after sulfonamide therapy of gonorrhea has gradually risen from about 15 to 35 per cent; some say to as high as 80 per cent in certain regions of the country. Therefore penicillin has almost completely replaced sulfonamide compounds in the treatment of gonorrhea and gonorrheal arthritis.

Penicillin for Gonorrheal Arthritis.—Penicillin has been outstandingly successful in the treatment of gonorrhea because, of all the organisms susceptible thereto, the gonococcus is the most sensitive. Recently the War Department announced that of 11,000 soldiers who had gonorrhea 96 per cent were cured by penicillin alone; the remaining 4 per cent were generally cured by penicillin combined with sulfathiazole. Although some workers report cures in only 86 to 92 per cent of their cases, according to Keefer and Moore penicillin alone will cure genital gonorrhea in about 98 per cent of cases. One would expect, therefore, that penicillin should be about equally effective against articular gonorrhea. Early experiences seemed to justify this expectation, and in most of the reported cases of gonorrheal arthritis treated with penicillin in 1943 and 1944 cure was achieved quickly. But in the fall of 1944, certain failures with penicillin given for gonorrheal arthritis were reported.

Results from Penicillin.—I have been able to find, briefly mentioned in the literature on penicillin (1943 to 1946 inclusive), a total of only 82 cases of gonorrheal arthritis treated with penicillin. Of these 82 cases only 20 were of proved gonorrheal arthritis—that is, cases in which gonococci had been recovered from synovial exudate. The remaining 62 cases must be classified as presumptive gonorrheal arthritis. In most of these no articular cultures had been made; in a few, cultures of synovial fluid had been made but were negative. Practically none of the cases were described in any detail whatever. They were merely spoken of as "gonorrheal arthritis" or "acute gonorrheal arthritis," "arthritis with gonorrhea," "subacute arthritis with gonorrheal urethritis" or "complicating arthritis."

Assuming for the moment that all 82 cases were actually cases of gonorrheal arthritis, results with penicillin can be summarized briefly. There were 18 cases of proved, and 59 of presumptive, acute gonorrheal arthritis and 2 of proved and 3 of presumptive "chronic gonorrheal arthritis."

In 11 (60 per cent) of the 18 proved cases of acute gonorrheal arthritis cure was obtained. In 1 case penicillin, given intravenously, was promptly effective. In 2 other cases only partial improvement resulted from the intramuscular or intravenous administration of 160,000 units of penicillin given within forty-eight to sixty hours, whereupon in each case penicillin was given intra-articularly once a day for three days (a total of 8,700 and 10,000 units respectively) with prompt cures. Hirsh, Feffer and Dowling gave penicillin, generally intramuscularly, to 15 patients with proved acute gonorrheal arthritis: Seven patients who received "short courses" of penicillin in doses totaling 50,000 to 2,400,000 units within about three days were not cured. But prompt cures were obtained by 8 patients who were given larger total doses, 925,000 to 2,000,000 units within five to ten days.

Of the 59 patients with presumptive acute gonorrheal arthritis 34 (58 per cent) were cured, and 25 (42 per cent) were not cured. Of the 5 patients who had chronic gonorrheal arthritis, 1 patient who had presumptive arthritis of more than three years' duration was reported as being promptly cured (20 per cent); the 2 patients who had proved gonorrheal arthritis of three and six months' duration, treated with "short courses," and 2 patients who had presumptive chronic gonorrheal arthritis (no data given) were not cured (80 per cent).

Of the 77 cases of acute gonorrheal arthritis, proved or presumptive, cure resulted from use of penicillin in 45 (58 per cent) and was not achieved in 32 (42 per cent). Of all the 82 cases, acute or chronic, proved or presumptive, cure was obtained in 46 (56 per cent) and was not obtained in 36 (44 per cent) with penicillin. Results for the patients cured were described as "dramatic," "unequivocal within forty-eight hours," "striking," "excellent," "immediate," "complete and rapid within a few days."

Reasons for Failure of Penicillin.—If penicillin cures genital gonorrhea in 90 to 98 per cent of all cases, the question arises, Why does it cure gonorrheal arthritis in only about 58 per cent of cases? Why are not the articular complications, especially the acute ones, as amenable to cure as the other complications of gonorrhea, most of which respond readily if sufficient penicillin is given? Several reasons have been or can be advanced as possible causes for these failures: (1) the use of inadequate amounts of penicillin; (2) the supposed relative impermeability of the synovial membrane to penicillin, given parenterally; (3) the possibility that penicillin-resistant strains of gonococci are being encountered; (4) tardiness in instituting treatment; (5) the use of relatively impotent preparations of penicillin, and (6) errors in diagnosis.

1. Inadequate Dosage: The total dosages of penicillin used to treat most of the patients who were not cured were often not clearly stated, but they were usually between 60,000 and 100,000 Oxford units, rarely more, given as a rule intramuscularly. Hence some of the 36 failures (in 32 cases of acute and in 4 of chronic disease) admittedly resulted from the use of doses which are now known to be inadequate in some cases. With the present availability of penicillin, no future failures should be properly attributed to inadequate doses.

2. Concentration of Penicillin in Synovial Fluid: Early workers recognized that when penicillin was given intramuscularly or intravenously some of it appeared in synovial fluid. Herrell and his associates found only half as much penicillin in synovial fluid as in blood serum. Others noted that when penicillin was injected intra-articularly its absorption into the blood stream was tardy. For these reasons the impression arose that the synovial membranes are relatively impermeable to penicillin. Hence certain failures in the use of penicillin for gonorrheal arthritis have been explained by the curious notion that penicillin, given intramuscularly or intravenously, does not get into the articular cavity in sufficient concentrations to cure the gonorrheal arthritis.

As a matter of fact, Herrell noted excellent res[illegible]; despite the relatively lower concentrations of penicillin in synovial fluid in his cases, and more recently Balboni, Shapiro and Kydd, using a different method of assay, noted that penicillin, given intramuscularly in doses of 25,000 and 40,000 units every three hours, penetrated rapidly into synovial fluid and attained levels comparable with those in blood serum. Furthermore, maximal antibacterial quantities of penicillin persisted longer in articular fluid than in blood serum.

But even if such is not the case and the concentrations of penicillin in synovial fluid are considerably lower than those in blood serum, this still is an inadequate reason for failure, because gonorrheal arthritis is not a disease of the articular *cavity*. It is a disease of the synovial and periarticular tissues. Since these tissues are highly vascular, even more so when inflamed, there is no reason to suppose that penicillin entering the vessels of the articular tissues should not reach the infected regions.

It might be suggested that in the presence of inflammation synovial blood vessels and membranes are less permeable to penicillin than under normal circumstances. But this argument is not valid, either, because penicillin appears to permeate acutely inflamed membranes somewhat more readily than normal membranes; at least such is the case regarding the spinal membranes. The studies of Balboni and his colleagues were made in the presence of inflamed synovial membranes in rheumatoid arthritis.

3. Penicillin-Resistant Gonococci: Careful analysis of the failures of penicillin in the treatment of gonorrhea have been made by many investigators, but to date no naturally penicillin-fast strain of gonococcus has been encountered, nor has penicillin fastness developed under treatment. Although certain bacteria have been made resistant to penicillin in the test tube, development of clinical resistance has not become a problem. Such an eventuality may be prevented, in part, by the administration of adequate and not minimal doses of penicillin.

4. Tardiness in Treatment: In several cases gonorrheal arthritis had previously been treated unsuccessfully with sulfonamide compounds before treatment with penicillin; hence, there was some delay in administering penicillin. Because of the limited clinical data given it is impossible to say to what extent, if any, such tardiness contributed to the 36 failures. When gonorrheal arthritis is treated adequately within the first two or three weeks of the disease, a cure with complete functional restitution usually occurs. But, if the disease is allowed to continue untreated or inadequately treated for several weeks, irreparable articular destruction may occur, so that even though penicillin stops the active inflammation and cures the arthritis, complete functional recovery does not result. However, Suchet's patient who had presumptive chronic gonorrheal arthritis for three and a half years was reported cured with only minor articular residues when penicillin was finally available and given. (I find it difficult to accept this as a bona fide case of chronic gonorrheal arthritis.)

Delay in the use of penicillin need no longer be due to lack of supply.

5. Ineffective Penicillin: Commercial penicillin consists of varying amounts of one or more of the five known fractions F, G, X, K and dihydro F. Penicillin F and G are equally effective against gonococci; penicillin X may be several times more effective than F or G. But penicillin K has been found to be relatively ineffective, as it is rapidly destroyed or eliminated from the body and does not provide therapeutic levels in bodily fluids. For a few months in 1945 commercial penicillin may have had relatively less G and more K than previously. It is possible that some failures in the treatment of gonorrhea and gonorrheal arthritis may be thus explained. But ineffective penicillin cannot well be blamed for future failures, as the commercial preparations now available contain a preponderance of potent penicillin G. Even so, to insure against possible failure the National Research Council has recently recommended the use of increased doses of penicillin.

6. Errors in Diagnosis: In my opinion, the most common cause of past and future failures of treatment of gonorrheal arthritis with penicillin has probably been and will be an error in diagnosis. Experience at an Army rheumatism center revealed that most cases of so-called gonorrheal arthritis resistant to penicillin were not gonorrheal arthritis at all but were cases of rheumatoid arthritis in men who happened to have gonorrhea or of rheumatoid arthritis precipitated, reactivated or aggravated by genital (not articular) gonorrhea. In all likelihood some of the 36 failures reported to date were not in cases of gonorrheal arthritis. The 4 failures of Sternberg and Turner were listed as "articular involvement associated with a persistent gonococcic urethritis; presumably the joint lesions were gonococcic in origin." The 6 failures of Thompson were classified as so-called gonorrheal arthritis in which cultures of articular fluid were "never positive at any stage of the disease." Without knowing the clinical features of such cases I cannot judge whether they represented bona fide gonorrheal arthritis with negative articular cultures (as occurs in about 65 per cent of cases) or whether they represented nongonorrheal arthritis in patients with gonorrhea.

It is not sufficiently understood that acute genital gonorrhea is just one more acute infection which, like tonsillitis, influenza, scarlet fever, septic sore throat, and so forth, can act as a trigger mechanism for the production of rheumatoid arthritis. Acute gonorrhea can provoke the first appearance of rheumatoid arthritis, reactivate previously active but currently quiescent rheumatoid arthritis, or aggravate notably a coexistent rheumatoid arthritis. To the Army's rheumatism center were sent many patients with supposed gonorrheal arthritis resistant to sulfonamide compounds or penicillin or both who on further study proved to have rheumatoid arthritis precipitated or aggravated by acute gonorrhea. This was demonstrated by the completely negative reactions to therapeutic tests with high doses of penicillin, new articular sites often becoming affected during such treatment, by the subsequent course of the disease, the slow development of symmetric fusiform polyarthritis as characteristic of rheumatoid arthritis and in some cases by articular biopsies.

In the light of these facts, physicians should review the characteristic features and the criteria for a diagnosis of gonorrheal arthritis, proved or presumptive. Before classifying any case as one of penicillin-resistant gonorrheal arthritis one should review carefully the past articular history and the clinical features of any patient with supposed gonorrheal arthritis who does not respond promptly and satisfactorily to treatment. There is evidence to suggest that "postgonorrheal rheumatoid arthritis" is now more common than gonorrheal arthritis.

Treatment.—The control of gonorrheal arthritis resolves itself therefore into two problems: (1) accurate diagnosis and (2) the early administration of sufficient amounts of potent penicillin to provide antibacterial concentrations in affected articular tissues. At times the first problem may be more difficult than the second.

In doubtful cases, the patient should be given the benefit of a full therapeutic test.

When arthritis is a complication of gonorrhea, the use of Romansky's treatment with a single injection of penicillin in beeswax and peanut oil is probably inadequate. Penicillin should be given intramuscularly, 25,000 to 30,000 units every three hours (200,000 to 240,000 units daily) for from seven to ten days. If, within the first three or four days of such treatment, there is no definite improvement, intra-articular injections of penicillin of at least 10,000 to 20,000 units should be made once daily for three days if the affected joints are large enough to be so treated. If the patient's arthritis is not cured or unequivocally and notably improved within seven to ten days, the case and its diagnosis should be reviewed thoroughly.

SUMMARY AND CONCLUSIONS

A review of recent literature has been made for this discussion on arthritis.

In cases of rheumatoid arthritis no significant results have been obtained from penicillin, neostigmine (prostigmine), physostigmine or concentrated vitamins, including ertron. Preliminary results from use of streptomycin and from Bogomoletz's antireticular cytotoxic serum have been essentially negative; further clinical trials may be justified. Chrysotherapy is still on trial. Many experienced rheumatologists continue to regard it as the best single treatment now available and believe that, despite the risk of occasional serious toxic reactions, its use is justified in cases of progressive rheumatoid arthritis.

For rheumatoid spondylitis roentgen therapy appears to be the remedy of choice but should be combined with postural and deep breathing exercises.

In cases of osteoarthritis of the hips, arthroplasty and the use of vitallium cups after the method of Smith-Petersen have given satisfactory results in 45 per cent of cases, but patients must be carefully selected for the procedure.

For patients with rheumatic fever, salicylates given intravenously rather than orally have *not* been proved to be of superior value. Sulfonamide prophylaxis, the prolonged daily administration of sulfonamide compounds to patients who have had rheumatic fever, has notably reduced the incidence of subsequent rheumatic attacks as well as the death rate from rheumatic carditis. Rheumatic patients not protected in this manner apparently have about six times more chances of developing acute recurrent exacerbation than patients not so treated.

Gonorrheal arthritis, despite certain reports to the contrary, is generally cured promptly when enough penicillin is given. Failures have apparently resulted chiefly from inadequate dosages and perhaps also from errors in diagnosis which led to the treatment of patients with genital gonorrhea whose associated arthritis was nongonorrheal. It should be emphasized that rheumatoid arthritis can be precipitated, reactivated or aggravated by acute gonorrhea, just one more infection which, like influenza, tonsillitis, and so forth, can act as a trigger mechanism. At one of the Army's rheumatism centers cases of postgonorrheal rheumatoid arthritis were more common than cases of gonorrheal arthritis. Penicillin will cure the genital gonorrheal but not the associated or coincidental rheumatoid arthritis.

PANEL DISCUSSION

STERNAL PUNCTURE

QUESTION: Dr. Sturgis, please evaluate the diagnostic importance of sternal puncture.

DR. C. C. STURGIS, Ann Arbor, Mich.: Sternal puncture will confirm the diagnosis of blood disorder about two thirds of the times it is employed. It is therefore of great value from a confirmatory standpoint. It presents a specific picture in about 16 to 17 per cent of all cases of blood dyscrasias. These are multiple myeloma, Addison's pernicious anemia and allied macrocytic anemias, agranulocytosis and certain parasitic diseases such as leishmaniasis and malaria. There are two points to make: First, positive evidence is much more important than negative, and, second, although it is an easy thing to aspirate a drop or two of sternal marrow from the body of the sternum, it takes an expert with experience to interpret the results. Poorly interpreted, it does more harm than good.

SPLENECTOMY

QUESTION: What blood disorders are benefited by splenectomy?

DR. STURGIS: I believe there are only two, possibly three. The hemolytic anemias, either the chronic congenital hemolytic anemias or the acquired, which we are seeing more cases of, for some reason, are both benefited by splenectomy. Splenectomy should be considered in every instance in which these diagnoses have been established. The other condition in which it is undoubtedly of benefit is in idiopathic thrombocytopenic purpura. You should be sure of the diagnosis, of course, in both of these conditions. The third possible disease is Banti's syndrome, so called. I myself, do not think splenectomy is of value there, but some think it is.

HODGKIN'S DISEASE

QUESTION: Are platelets actually increased in Hodgkin's disease?

DR. STURGIS: The platelets may be increased in Hodgkin's disease, but in the terminal state certainly there is a leukopenia with thrombocytopenic purpura.

HEMOGLOBIN ESTIMATION

QUESTION: What is the most satisfactory clinical method of hemoglobin estimation?

DR. STURGIS: First, I believe that you should employ the method where the maximum depth of color is reached *instantly*. That can be done by putting the blood in an alkaline solution, ammonium hydroxide, and oxyhemoglobin is instantly formed. Second is a suitable colorimeter. The photoelectric colorimeter is being perfected; it is less expensive, and it can be used by the practitioner. I think the oxyhemoglobin method, which is described in any modern textbook on clinical pathology, and the photoelectric colorimeter method are the best.

BLOOD DYSCRASIAS

QUESTION: What are the most common blood dyscrasias encountered by any physician in the United States?

DR. STURGIS: I believe I can answer that, at least for the vicinity of Ann Arbor. We did 25,000 routine hemoglobin estimations on patients in the outpatient and inpatient services of University Hospital, and 12.5 per cent had anemias of clinical significance. Forty-one per cent of these anemias were of the iron deficiency type—that is important—due to hemorrhage, usually, and hemorrhage from the gastrointestinal tract or the uterus in the case of women. This is an important type of anemia, because it is the most common and yields most readily in most instances to large doses of iron. A close second in frequency was anemia associated with chronic infection, infection of the urinary tract, of the pelvis, chronic infection of the lung, osteomyelitis or any other type of infection. This is a moderate anemia. It is very common. There are only two therapeutic agents of value: one something to combat the infection, such as penicillin and blood transfusion. The anemia of this type is usually mild. The 20 per cent that are left were made up of pernicious anemia, aplastic anemia, hemolytic anemias, and so forth.

LEUKEMIA

QUESTION: What is the dosage of radioactive phosphorus in treating leukemias?

DR. STURGIS: In treating leukemias we give 6 millicuries orally once a week for three or four doses. There is an individual variation, however, in the dosage. We treat until the white blood cell count is about 40,000. It usually takes two to four doses of 6 millicuries each.

ULCERATIVE COLITIS

QUESTION: Dr. Alvarez, what's new in acute ulcerative colitis?

DR. WALTER C. ALVAREZ, Rochester, Minn.: Sulfathalidine is the drug I have heard most from. One of the big things to remember is these people are losing a lot of protein and a lot of food, going down the drain, and they must be fed. We mustn't starve them the way we used to do. Another treatment I have heard good things from of late is treatment with the amino acids. What is more, here is an idea that I think few of us, perhaps, ever had before. In order to digest, we must have ferments in the intestine; we must have juices, and those juices contain protein. If the patient is not getting much protein and the rest is going down the drain, he can't make ferments. That is why sometimes, after giving the amino acids, the results have been spectacular. The patient has gone on digesting again.

COARCTATION OF AORTA

QUESTION: Dr. Kerr, what is the oldest age at which operation for coarctation of the aorta would be feasible?

DR. WILLIAM J. KERR, San Francisco: There have been few of these operations to date. I know of only seven or eight. I think, probably, one would get the best results if it was done during the early years or during youth. But it should be kept in mind that the longer the patient lives the better the collateral circulation. One need have little fear of clamping off the aorta under those circumstances, because there is already an adequate supply without anything going through this channel, or very little. I think there is less chance of damage to the spinal cord under these circumstances. But I think it is hard to answer that question categorically; one would think around the age of 50 or 60 or 70, especially if the patient had arterial changes, one might hesitate to do that.

MEDICAL TREATMENT OF GOITER

QUESTION: Dr. Rynearson, does it appear that recent advances in the medical treatment of goiter may supplant surgery?

DR. EDWARD H. RYNEARSON, Rochester, Minn.: These first two reports were turned over to you and me only on May 11, 1946. All of us have known that these studies were in progress, but this is the first time the medical profession as a whole has had the opportunity of reviewing the experiences of the Boston group. As far as I know, the group in San Francisco and the Bay District have not yet reported their results in the literature. It is by all odds the most important and fascinating thing which has come out in the treatment of goiter. I am just a little afraid, however, that we may forget the previous work, the use of the goiter genes which Astor and Williams and the others started. Of these two methods, there will undoubtedly be something forthcoming which will greatly help our handling of the hyperthyroid patient. Certainly the goiter genes already have helped you and me get patients ready for surgery, whom we have had a most difficult time getting ready before. So that as of July 5, 1946 I should say that the goiter genes have proved to have their principal role in the proper preoperative preparation of patients, and that this new principle, the radioactive iodine, suggests from the paper Chapman gave and from the articles which you and I have had a chance to read, here may be a lead toward eliminating the surgeons.

DR. KERR: It should be kept in mind in connection with this type of treatment with radioactive isotypes of iodine that it is still a destructive process. As Dr. Rynearson suggests, if we go back through history in the treatment of goiter we shall find that practically all the methods that have any value, outside of the use of iodine and some of the other drugs, are all destructive: injection of boiling water, putting in bare radon tubes or the use of x-ray treatment or surgical removal. They are all destructive methods, and so is this. The advantage here is that the radioactive material apparently goes to the most hyperplastic and most actively proliferating cells. I believe that, under proper control, this method may entirely replace the other destructive methods, including surgical treatment for hyperplastic goiter.

SCHISTOSOMIASIS

QUESTION: Dr. Faust, would you briefly comment on the modern clinical treatment of schistosomiasis?

DR. ERNEST C. FAUST, New Orleans: As I indicated previously, there is not as yet available for clinical use any new preparation. However, we have gone back to the oldest one used, used since 1918, namely antimony and potassium tartrate. By slightly changing the method of administration, in other words injecting 0.5 per cent solution rather than 2 to 6 per cent solution, the tolerance has been greatly increased. Within a period of slightly less than one month, giving it once a day intravenously on alternate days, we are able to introduce approximately 0.5 Gm. of metallic antimony. While there are some relapses, the results have been very satisfactory in comparison with the other antimonials which have been administered. There are these things which must be kept in mind, namely that a few people are intolerant and have uncontrollable bronchial spasm; some have uncontrollable nausea and vomiting, and one thing which I think we should definitely keep in mind because we now know a little about it, namely that a large amount of antimony is deposited in the thyroid gland, so that in the cases of hyperthyroidism it may be that antimony is contraindicated.

PENICILLIN IN PNEUMONIAS

QUESTION: Dr. Reimann, some one wishes to know whether all pneumonias should be treated with penicillin.

DR. HOBART A. REIMANN, Philadelphia: As I think you can gather from what I said before, my opinion on that point is that all patients with pneumonia should be treated with penicillin, but the recommendation should be qualified. When, for example, the practitioner in the country has to deal with a patient suddenly taken with a severe form of pneumonia, I think he is perfectly justified in giving the patient sulfonamides but preferably penicillin. The same qualifications obtain here that I mentioned before: If one treats the patient empirically, the penicillin or the sulfonamides should be given in large, recommended doses promptly and should be stopped within a reasonable time because of the danger of sulfonamide poisoning, which we have seen so often. I think the best answer to the question is that one has to use a good deal of judgment as to whether one is going to use either penicillin or sulfonamides for the pneumonias but probably make an etiologic diagnosis, if possible, beforehand.

VIRUS DISEASES

QUESTION: Dr. Schultz, what laboratory diagnostic procedures are of value to the practicing physician in virus diseases especially neurotropic or respiratory, and when should they be used?

DR. E. W. SCHULTZ, Stanford University, Calif.: In the neurotropic virus diseases we have little that can be of value in the immediate diagnosis. Most of it is in retrospect. The most helpful procedure is the collection of serum early in the disease and a repetition of this later on, and then tests for the presence of neutralizing antibodies, whether or not neutralizing antibodies have appeared. In certain of the encephalitides it is possible at times to isolate the virus from the blood. This is unlikely in this group of infections. Certainly there are no opportunities for demonstrating the virus in either blood or spinal fluid in poliomyelitis. In poliomyelitis the presence of virus in the stools may be demonstrated by inoculation of the fecal suspensions intranasally. In some instances the virus may be demonstrated in the nasopharyngeal secretions. In respiratory infections such as influenza it is possible to demonstrate the virus directly by inoculating it into mice or ferrets intranasally. I think that just about covers it, the most important test being the test for neutralizing antibodies in the blood.

RHEUMATIC DISEASE

Question: Dr. Hench, if a rheumatoid arthritic patient is sensitive to gold, what treatment do you use?

Dr. Philip S. Hench, Rochester, Minn.: One has to revert, of course, to the more conservative measures, which, I might add, in the hands of some men seem to be just as good as gold therapy. Of course, they are the removal of obvious areas of infection, the institution of a program of rest so the inflamed joints would not be traumatized by occupation and recreation unduly, and, perhaps, the use of physical therapy daily in their own home, supplemented by professional physical therapy, which will relieve pain and relieve muscle spasm, and then, perhaps, vaccine therapy.

HYPERTENSION

Question: Dr. Kerr, what is the most valuable method you employ in treating a hypertensive patient who appears to be steadily getting worse, that is, hypertension constantly increasing in an otherwise apparently normal adult?

Dr. Kerr: I assume that this is a patient who does not have an underlying nephritis. There is the problem, of course, of treating the patient from the psychologic standpoint, of giving the patient adequate rest during this time, although there are some who feel that the patient with hypertension has to be kept moving. There is a period when they are improved. I think the use of phenobarbital or some other sedative is of value at this time. If the heart is failing, obviously the heart requires its own treatment. During the last ten or fifteen years I have had a good deal of experience with patients who seemed to be doing badly, who had increased venous pressure, who had encephalopathy developing as well as cardiac failure, and some renal failure. I have found, in a high percentage of patients in this group, that the spinal fluid pressure was very high, up to 300, 400, 500, even up to 700 mm. of spinal fluid. They may have ocular manifestations during this time, even rapidly failing vision. By repeated spinal fluid removal of as much spinal fluid as can be taken out, the symptoms of headache, of visual disturbance, cardiac failure, even renal failure, may be eliminated or eradicated.

SEX HORMONES IN HEART DISEASE

Question: Dr. Kerr, have sex hormones any place in treating heart disease?

Dr. Kerr: I have not had any great experience with sex hormones in the treatment of heart disease. Many of us for a good many years have had the idea that if we gave too much of those substances to patients who had heart disease or hypertension it might even be dangerous. I don't know whether that is true, but it has been, of course, suggested. I haven't had enough experience so that I could pass any judgment on that. It does give some people a sense of well being to get something which they think might be helpful.

MALARIA

Question: Dr. Faust, what is the best method of treating the chronic recurrent malarial attacks in our returning Pacific veterans?

Dr. Faust: Ninety-nine per cent of the cases coming in from the Pacific—at least 99 per cent—are going to be the vivax type. The so-called benign but the very troublesome vivax type and the falciparum type have been, in all these cases, eliminated by adequate atabrine suppressive treatment in the field. If these cases have been proved to be resistant time and again to clinical administrations of atabrine, then quinine should be used at least until chloroquin becomes available, and the quinine would be given by oral administration, using 30 grains (2 Gm.) a day for a period of approximately six days, and then proceeding with 10 grains (0.65 Gm.) a day for a period of five to six weeks at most. When chloroquin becomes available 4½ grains (0.3 Gm.) given twice a day for the first day and then 4½ grains for the following three days will constitute a course of treatment. This is a better drug than atabrine, does not produce discoloration and has a much better record in reducing or completely eliminating relapse. So I think we can depend on it, in the course of the next several months, to give us an answer which will be much better than quinine or atabrine. But if the patient is now atabrine resistant, quinine is the present drug of choice.

THIOURACIL IN THYROTOXICOSIS

Question: Dr. Rynearson, in selected cases, that is those of poor surgical risk, or those who have recurrent thyrotoxicosis, would you condemn persistent thiouracil administration?

Dr. Rynearson: As of 1940, if we can use that, the deaths which were occurring in goiter surgery were pretty largely either those who had such severe cardiac failure secondary to adenomatous goiter, with hyperthyroidism or prolonged and unrecognized toxic diffuse goiter, they could not satisfactorily be prepared for operation. The second group was a large, unfortunately large, number of patients who had been put on 10 drops of iodine three times a day, week after week and month after month, and in some instances a year or longer. Those patients were terribly difficult to get ready for operation. With the use of thiouracil or thiobarbital or any one of the goiter genes we have at our disposal a better method than the use of iodine, even though it takes longer for preparing those patients for operation. The last report which I have had from Boston, where they have had the greatest experience in serving these patients, is that about 50 per cent of the patients in whom an attempt has been made to treat the hyperthyroidism medically, without operation, they have had recurrences of the hyperthyroidism, requiring thyroidectomy. Perhaps one third of the patients with hyperthyroidism can be controlled with these goiter genes, but in all instances it does offer an excellent method for preoperative medical treatment. It probably is not the answer to cases of severe goiter, from the standpoint of medical treatment without surgery.

SALICYLATES IN RHEUMATIC FEVER

Question: Dr. Reimann, some of the members would like to know a little more about your belief in the use of massive doses of salicylates for rheumatic fever and the method of administration.

Dr. Reimann: I have always been opposed to massive doses of drugs for any disease simply to bring the patient to the point of toxicity. I think there it is an error in judgment. Why give normal doses when smaller doses will produce the same clinical effect? With regard to salicylate therapy in acute rheumatic fever, we know the drug is not a specific in the sense of the term that it affects the disease mechanism, but it is a specific symptomatic agent. So, instead of giving the enormous doses of 10 Gm. intravenously which were once recommended, why not be satisfied with doses of 8 to 10 Gm. per day, which seems to control the symptoms as satisfactorily as larger doses, without having the danger of toxicity and even of death, which has occurred in a number of patients receiving this enormous dosage.

HISTAMINE IN GASTRIC ULCER

Question: Dr. Alvarez, several of the members would like to know something of the status of histamine in the treatment of ulcer. Is it felt that the degree of acidity is concerned in the actual development of the ulcer? What is the relationship between histamine and the treatment as outlined by Dr. Bernstein?

Dr. Alvarez: I can't see how on earth anybody would want to treat ulcer with histamine, which should raise the acidity. Actually, years ago, we had some experience with that, and it didn't work any too well. We were getting, first, mucin which was supposed to cure ulcer, as some of you may remember, and that mucin turned out to be just full of histamine, and it did not cure the patients. So that I would never think of giving histamine to my patients, and I would be an awful doubting Thomas. It would be very difficult, I think, to convince me that it was any good, because we do feel, I think practically all of us today, that the height of the acid has much to do with keeping an ulcer going.

POTASSIUM THIOCYANATE IN HYPERTENSION

QUESTION: Dr. Kerr, what is your attitude regarding the use of potassium thiocyanate in the treatment of hypertension?

DR. KERR: I have used it very little, and I don't think it is a drug that should be used generally unless one has adequate control of the blood levels. I don't think it is very often needed and, certainly it is not the real answer to hypertension. I seldom, if ever, use it.

CANCER OF UTERUS; METASTASES IN BONE

QUESTION: Dr. Adair, what about the therapy of carcinoma of the body of the uterus? Is there any relief experienced with large doses of testosterone propionate given three weeks for metastasis in bone, other than metastases in the breast?

DR. ADAIR: What is the treatment of cancer of the body of the uterus? That is surgical operation. Cancer of the cervix has had an interesting discussion during this convention, in that they are now separating about 10 per cent of the early carcinomas of the cervix and using radical surgery there, and that is new. I have had no experience with testosterone therapy in bone conditions other than metastases from cancer of the breast. I think it would be very illuminating to make further studies in that field. I have repeated recently the work of Hadow in England, who divided his elderly women with cancer of the breast, women from 60 on up, giving them large doses of the estrogens. I found that, to my great astonishment, I got 40 per cent improvement in patients who had metastatic lesions in the soft tissue. I have not yet had the opportunity to repeat that work in bone, which was a very striking piece of work, and it should be furthered and repeated by other workers.

PLASMOQUIN IN RELAPSING MALARIA

QUESTION: Does Dr. Faust feel that plasmoquin has no place in the treatment of relapsing Pacific malaria?

DR. FAUST: I think plasmoquin does have a place. Plasmoquin has this advantage, which atabrine, quinine and probably chloroquin and paliquin do not have: it sterilizes the gametocytes in the blood circulation so that the mosquitoes will be taking up sterile gametocytes when they take the blood. There is some indirect evidence also that plasmoquin gets down underneath the circulating malaria parasites, perhaps down into the sporozoitic foci, and sterilizes them there, perhaps actually cutting off, to a certain extent, their production. So that plasmoquin probably should always be recommended in conjunction with the main therapeutic, such as atabrine or quinine or chloroquin for this particular purpose or these two allied purposes.

POLIOMYELITIS

QUESTION: Dr. Schultz, should cases of poliomyelitis be isolated, and what technic of isolation should be used?

DR. SCHULTZ: We do not yet know how the disease is transmitted. All we know is that the virus is eliminated in the stools in rather large amounts, in some cases in the nasopharyngeal secretion. The connection between these two sources and the ultimate port of entry, which is also unknown, is not understood. I should think that isolation, complete isolation, is indicated, certainly until we know how the disease is transmitted, with particular attention to these two sources, and particularly the fecal source of the virus.

OBESITY

QUESTION: Dr. Rynearson, would you please list a few things which could be done for the obese patient that would promote safe weight reduction?

DR. RYNEARSON: Here again you run into a different concept of obesity, of two perfectly honest physicians approaching the same patient but with divergent opinions. I think the exhibit put on from the Department of Physiology of Northwestern University on the use of amphetamine as a treatment of obesity was fine. There, again, my interpretation, as I watched that exhibit, was this: that the use of that or other allied drugs has only one function, and that is to decrease the patient's appetite, in that case, human or canine; that the decrease in weight, again, as directly correlated with the number of calories ingested and the amount of calories utilized. I am therefore committed in my own thinking—I have had no reason to change it—that, if obesity is an endocrine problem, there still is no endocrine therapy for it. Nobody has ever used any endocrine extract which has caused them to lose an ounce, with the exception, of course, of adequate doses of thyroid. But even if it is an endocrine problem I know of no endocrine treatment. There has never been a patient in the history of the world who would fail to lose satisfactorily if that patient followed a diet sufficiently low in calories to permit weight reduction. If those two premises are correct, the safest and best treatment for obesity is a weight reduction program, making certain the patient has adequate mineral and vitamin supplements in which that diet is deficient. Beyond that I do not go. I have no particular feeling about the use of amphetamine except this: If the patient honestly wants to reduce, then that patient honestly will cooperate in limiting the calories. There never has been a failure, I wish to repeat, when an obese patient has failed to lose weight in following a rigid reduction regimen.

MINERAL OIL IN CONSTIPATION

QUESTION: Dr. Alvarez, is mineral oil a safe drug to be taken for constipation?

DR. ALVAREZ: I never heard of its killing anybody, so I guess it is safe that way. How anybody digests it at all, taking mineral oil, I don't know. We tell our patients, and most of them are perfectly willing to accept this dictum, that they musn't take cold, greasy food, and yet they take the food and pour cold, greasy oil on it and, what is more, an oil that is almost indigestible. Somehow or other they continue to digest. Some develop flatulence and indigestion, and some of them, of course, get into trouble after a while because the oil comes through unannounced. Then there is one other difficulty with the prolonged taking of oil: the feces are so soft that they do not dilate the anal ring and, as a result, these people get an anal ring which is very tight and sometimes has to be dilated or operated on. So I say to patients, if they want to take liquid petrolatum occasionally, it is all right; but to settle down to it for the rest of one's days I don't think is any good.

DR. KERR: I don't see how they get along without mineral oil in Minnesota. If you ever traveled through there on the train, you would realize during the wintertime, at least, that almost everybody must have constipation because it is so far out to the little house on the hill.

PENICILLIN IN ENDOCARDITIS

QUESTION: Dr. Reimann, what about the use of penicillin in subacute bacterial endocarditis?

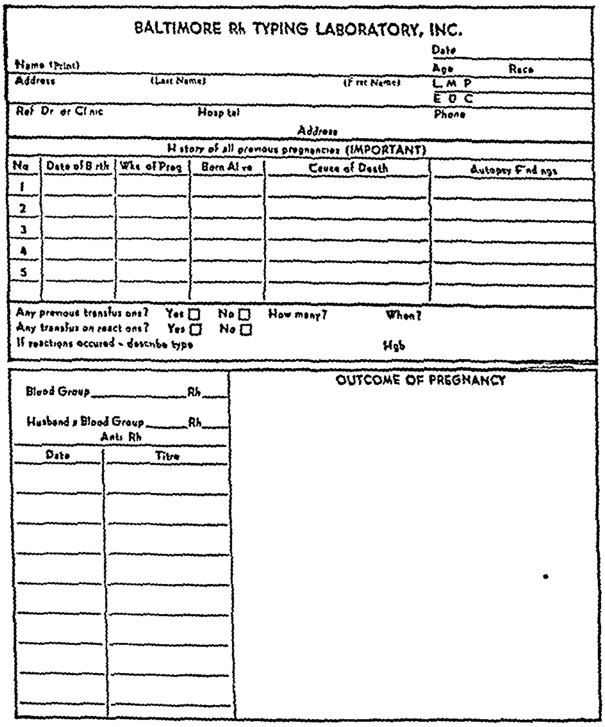
DR. REIMANN: The use of penicillin for this serious disease has been one of the most striking advances in the field of treatment of infectious diseases. Heretofore we had no agent that was at all satisfactory, with perhaps, the exception of sulfonamide compounds, which weren't very satisfactory. Now we see report after report coming in of 50 to 60 per cent of patients cured with penicillin, followed two to three years. It will take longer before we can evaluate this, because even though the patient is cured from his original attack there is every possibility and chance that he will become at some future time reinfected, because the nidus of the disease or distorted valve is still present. There is nothing to prevent the reimplantation of a Streptococcus viridans on that valve in case it becomes bacteremia. That brings up the initial, important question, which there isn't time to discuss, about the management of patients who have had subacute bacterial endocarditis, should they have a cold or should they have operation. I think it would be most valuable to use penicillin in a prophylactic manner, again, only for a short time, either before or during the operation and stop it again.

THE BALTIMORE Rh TYPING LABORATORY

A New Community Public Health Service

MILTON S. SACKS, M.D.
ELSA F. JAHN
and
WILLIAM J. KUHNS, M.S.
Baltimore

Subsequent to the initial report in 1940[1] of the discovery of the Rh factor in human red blood cells there has been a rapid succession of papers emphasizing the importance of this new knowledge to clinical medicine. The principal applications have been to certain problems of obstetrics and pediatrics and to transfusion therapy. Rh testing and studies of Rh isoimmunization, however, did not become widespread immediately for a variety of reasons. Among these may be mentioned the relative scarcity and expense of potent and reliable testing serums; the increasing antigenic complexity of the Rh factor, and technical problems associated with the demonstration of anti-Rh immune bodies. Sporadic studies were made in some obstetric patients whose previous histories were strongly suggestive of the effects of Rh incompatibility and in other persons in whom, in the course of receiving multiple transfusions, inexplicable reactions developed. As it became increasingly obvious that varying manifestations of congenital hemolytic disease were by no means uncommon and that there was serious potential danger to both the mother and her newborn child in absence of preexisting knowledge of the Rh status in pregnancy,[2] a number of obstetricians in Baltimore deemed it essential to establish facilities for routine Rh studies at a minimal cost for any clinic or private patient in the city.



BALTIMORE Rh TYPING LABORATORY, INC.

Date
Name (Print) (Last Name) (First Name)
Age Race
Address
L M P
E D C
Ref Dr or Clinic Hospital
Phone
Address

History of all previous pregnancies (IMPORTANT)

No	Date of Birth	Wks of Preg	Born Alive	Cause of Death	Autopsy Findings
1					
2					
3					
4					
5					

Any previous transfusions? Yes ☐ No ☐ How many? When?
Any transfusion reactions? Yes ☐ No ☐
If reactions occured - describe type Hgb

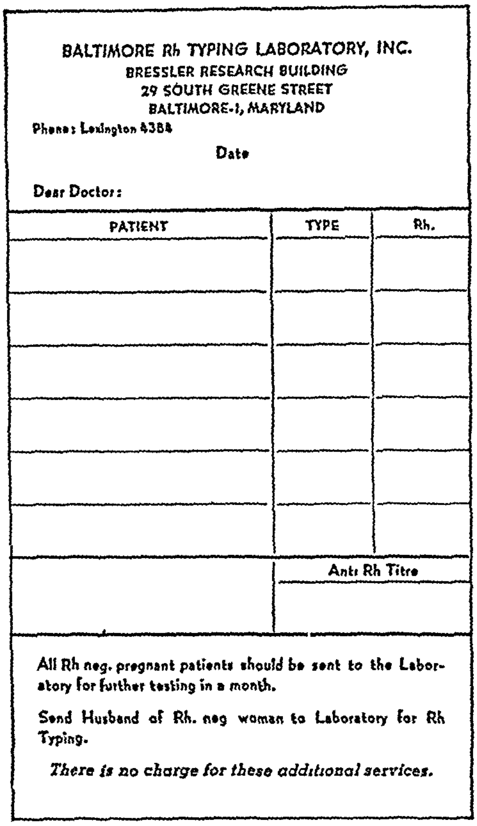
Blood Group ________ Rh ____
Husband's Blood Group ______ Rh ____
Anti Rh

Date	Titre

OUTCOME OF PREGNANCY

Fig 1.—Front (top) and back (bottom) of history card

In the spring of 1945 the Obstetrical and Gynecological Section of the Baltimore City Medical Society appointed a committee to study the feasibility of establishing a central laboratory for Rh testing. Official public health agencies were unable, because of wartime problems, to assume the additional burdens which this work entailed, but the cooperation of the City Health Department was of great assistance in the operation of the laboratory. It was decided to establish the laboratory as a cooperative private venture under the sponsorship of the society. Funds sufficient for the purchase of equipment and the employment of trained personnel were contributed as loans by individual members of the section. Space was generously provided without charge by the University of Maryland School of Medicine. The laboratory began to function on Aug. 1, 1945.



BALTIMORE Rh TYPING LABORATORY, INC.
BRESSLER RESEARCH BUILDING
29 SOUTH GREENE STREET
BALTIMORE-1, MARYLAND
Phone: Lexington 4384

Date

Dear Doctor:

PATIENT	TYPE	Rh.
	Anti Rh Titre	

All Rh neg. pregnant patients should be sent to the Laboratory for further testing in a month.

Send Husband of Rh. neg woman to Laboratory for Rh Typing.

There is no charge for these additional services.

Fig 2.—Physician's report card.

PLAN OF OPERATION

The laboratory is under the jurisdiction of a committee of six members of the local Obstetrical and Gynecological Society. One of us (M. S. S.) was appointed director. Two technicians, a research assistant, a stenographer, a maid and several part-time volunteers make up the rest of the staff. Services are offered free to dispensary patients of hospitals within the city and to patients of the City Health Department Obstetrical Clinics. Private patients pay $3 or $5, depending on whether their physician requests a serologic test for syphilis and a hemoglobin determination in addition to routine Rh typing and blood grouping. The initial charge is the only one; all subsequent studies throughout pregnancy are made without further cost to the patient. Similar arrangements have been made available to physicians in the counties of Maryland.

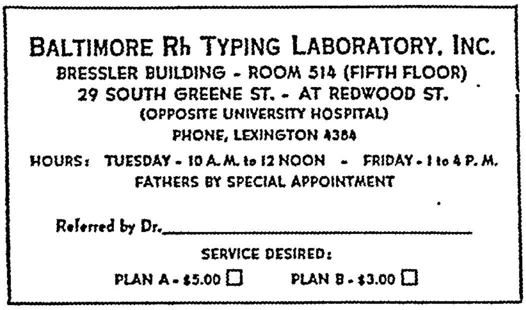
Miss L. Anne Hellen and Mrs. Lewis M. Hess assisted in the operation of the laboratory.

From the Baltimore Rh Typing Laboratory and the Department of Clinical Pathology, University of Maryland School of Medicine.

[1] Landsteiner, K., and Wiener, A. S.: An Agglutinable Factor in Human Blood Recognized by Immune Sera for Rhesus Blood, Proc. Soc. Exper. Biol. & Med. **43:** 223 (Jan.) 1940.

[2] Levine, P.: Prevention of Unintentional Isoimmunization of the Rh Negative Female Population, J. A. M. A. **128:** 946 (July 28) 1945; The Pathogenesis of Erythroblastosis Fetalis, J. Pediat. **23:** 656-675 (Dec.) 1943.

In the case of dispensary and clinic patients, blood samples are drawn in the various hospital outpatient departments and, through the cooperation of the City Health Department, are transported to a central point adjacent to this laboratory. Special cardboard boxes containing a test tube and a history card are distributed to the various hospitals and city obstetric clinics with the aid of the health department. Private patients receive appointment cards (fig. 3) from a stock furnished by the laboratory to all physicians requesting them. For the benefit of private patients certain hours on two specified days each week have been designated for the drawing of samples of blood. Each period is of three hours' duration. The arrangement is designed to take care of all patients referred by their physicians during the course of one week. Patients are occasionally seen at other times by special appointment. Laboratory periods are so spaced that all the tests on a given group of patients can be completed before the subsequent session.

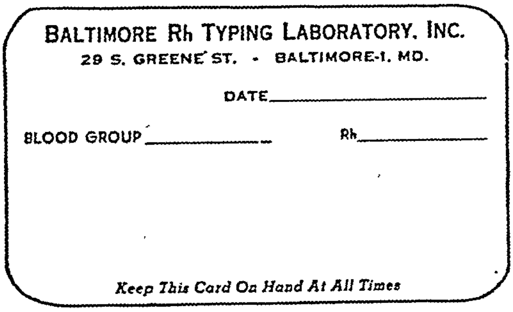

BALTIMORE Rh TYPING LABORATORY, INC.
BRESSLER BUILDING - ROOM 514 (FIFTH FLOOR)
29 SOUTH GREENE ST. - AT REDWOOD ST.
(OPPOSITE UNIVERSITY HOSPITAL)
PHONE, LEXINGTON 4384
HOURS: TUESDAY - 10 A.M. to 12 NOON - FRIDAY - 1 to 4 P.M.
FATHERS BY SPECIAL APPOINTMENT

Referred by Dr.____________________

SERVICE DESIRED:
PLAN A - $5.00 ☐ PLAN B - $3.00 ☐

Fig. 3.—Patient appointment card.

All pertinent data concerning the patient are entered on a special history form (fig. 1). Blood groupings are performed as soon as possible after the conclusion of a blood-drawing session. Rh typing is then done with a potent human antiserum of Rh_0' (Rh_1) specificity. All samples of blood giving obviously positive reactions are thus screened out. Those blood samples giving negative or doubtful reactions are further tested with three other antiserums, including those of Rh′ and Rh″ specificity. The serums of all patients with Rh-negative blood are then tested for antibody content. For this purpose three tests are routinely performed: the blocking test, the conglutination test and the Diamond slide test.[3] If a positive reaction is obtained with any of these, titration of the antibody is attempted with the use of the conglutination technic of Wiener, as well as the standard procedure with a 2 per cent suspension of Rh positive cells in isotonic solution of sodium chloride. In this manner the presence in the serum of univalent (glutinins) or bivalent (agglutinins) antibodies, or both, is determined. Details are recorded on the history form. A special file is kept of all sensitized patients. Reports are sent promptly to the referring clinic or physician (fig. 2). The patient is sent a small card (fig. 4) on which her blood group and Rh type is indicated. The purpose of this is to obviate the necessity of a repetition of blood typing when the patient is admitted to a hospital for delivery.


BALTIMORE Rh TYPING LABORATORY, INC.
29 S. GREENE ST. - BALTIMORE-1, MD.

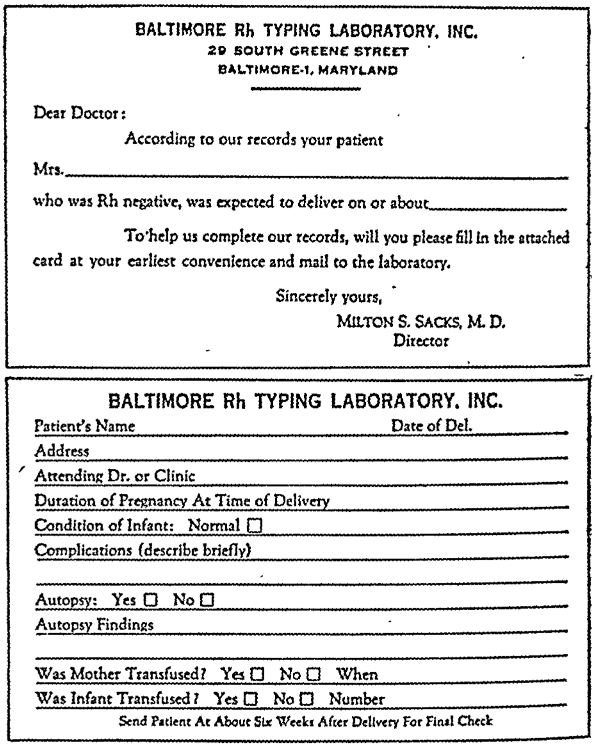
DATE________________

BLOOD GROUP__________ Rh__________

Keep This Card On Hand At All Times

Fig. 4.—Patient's blood group record.

The husbands of all women with Rh-negative blood are requested to come to the laboratory for typing. Women whose husbands are found to have Rh-negative blood are not required to return to the laboratory for further testing. If the husband is found to be Rh-positive and of subgroup Rh_0' (Rh_1) or Rh′, his blood cells are Hr typed to determine whether he is homozygous or heterozygous.[4] This information is, of course, particularly important in the case of sensitized women with Rh-negative blood who have previously given birth to erythroblastotic infants.


BALTIMORE Rh TYPING LABORATORY, INC.
29 SOUTH GREENE STREET
BALTIMORE-1, MARYLAND

Dear Doctor:

According to our records your patient

Mrs.____________________

who was Rh negative, was expected to deliver on or about__________

To help us complete our records, will you please fill in the attached card at your earliest convenience and mail to the laboratory.

Sincerely yours,
Milton S. Sacks, M. D.
Director

BALTIMORE Rh TYPING LABORATORY, INC.
Patient's Name Date of Del.
Address
Attending Dr. or Clinic
Duration of Pregnancy At Time of Delivery
Condition of Infant: Normal ☐
Complications (describe briefly)
Autopsy: Yes ☐ No ☐
Autopsy Findings
Was Mother Transfused? Yes ☐ No ☐ When
Was Infant Transfused? Yes ☐ No ☐ Number
Send Patient At About Six Weeks After Delivery For Final Check

Fig. 5.—Front (top) and back (bottom) of follow-up card.

All women with Rh-negative blood whose husbands have Rh positive blood are followed at monthly intervals throughout the first and second trimesters of pregnancy and at closer intervals in the third trimester. The earliest evidences of sensitization are thus immediately detected and reported to the attending physician.

Patient's records are transferred from the active (pregnant) Rh-negative file to the inactive file at the termination of pregnancy. Special follow-up cards (fig. 5) are sent to the referring physician or clinic requesting information in regard to the outcome of the pregnancy. When these are returned they are clipped to the patient's history and become part of the permanent record. Samples of the patient's blood are studied at ten days and six weeks post partum as a final check for the presence of antibodies.

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[3] Wiener, A. S.: A Blocking Test for Rh Sensitization, Proc. Soc. Exper. Biol. & Med. **56**: 173-176 (June) 1944; Conglutination Test for Rh Sensitization, J. Lab. & Clin. Med. **30**: 662-667 (Aug.) 1945. Diamond, L. K. and Abelson, N. M.: The Demonstration of Anti-Rh Agglutinins: An Accurate and Rapid Slide Test, ibid. **30**: 204-212 (March) 1945.

[4] Race, R. R., and Taylor, G. L.: Serum That Discloses Genotype of Rh-Positive People, Nature, London **152**: 300 (Sept. 11) 1943.

COMMENT

The accumulation of mass data is essential to the proper evaluation and solution of the many problems still associated with heterospecific pregnancies. In most instances Rh heterospecificity is responsible for the varied manifestations of congenital hemolytic disease, but recent studies indicate the occasional involvement of maternal-fetal differences in regard to the A-B-O and M-N agglutinogens. For reasons cited earlier in this paper widespread adoption of Rh testing procedures has been retarded in spite of demonstrated value. At the present stage of development Rh studies, particularly those associated with the demonstration of the presence and character of antibodies, lend themselves well to centralization. The enthusiasm and success with which the establishment of this privately sponsored cooperative laboratory has been received attest to this fact. During the first eight months of its existence, the laboratory performed tests on approximately 7,000 pregnant women. There were approximately 12,000 births in Baltimore during a similar period. Even on the low fee basis, $3 to $5 for private patients, the laboratory has more than maintained itself, establishing a sizable sinking fund for the future.

To date, the proportions of Rh-positive and Rh-negative persons conform closely to previously established figures. The opportunity to study distribution of the Rh subgroups has so far been limited by the scarcity of necessary serums. Such studies are now in progress. Of a group of 904 Rh-negative pregnant women, 46, or 5.08 per cent, displayed evidences of sensitization. Detailed studies of this group also are now in progress. It is obvious that knowledge of the existence of sensitization in a particular patient will be of value in the prevention of intragroup hemolytic transfusion reactions. Future sensitization of women with Rh-negative blood by the unwitting transfusion of Rh-positive blood should also be prevented to a large extent.

Current methods for the prevention and management of congenital hemolytic disease are admittedly not too satisfactory. The detection and availability of a fairly large group of sensitized patients will permit the application and study of new technics for the better handling of this important clinical entity.

Among the byproducts of the operation of the laboratory are (1) maintenance of a continuous supply of potent serum by voluntary venesection of Rh-sensitized women whose serums contain bivalent antibodies, (2) accumulation of a large list, available to all hospitals in the city, of Rh-negative men of all blood groups who are willing to serve as volunteer or professional donors in an emergency and (3) application of Rh tests in medicolegal problems which involve disputed paternity.

SUMMARY

1. The Baltimore Rh Typing Laboratory, a privately sponsored cooperative community venture, began to function Aug. 1, 1945.

2. The services of the laboratory are available to private and clinic patients at a moderate fee. All pertinent data are kept in a permanent file and Rh study as a routine part of prenatal care has been performed on 7,000 women in the first eight months of the laboratory establishment.

3. The accumulation of mass data on Rh-sensitized patients will permit the application and study of new technics for preventing congenital hemolytic disease.

Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
CHICAGO

(Continued from page 923)

(Note.—*Following is the seventh chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of The Journal. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in The Journal. *The complete work will be published in book form It is hoped to have it available by the time of the annual session.*—Ed.)

CHAPTER 7. *The End of the First Decade*

Viewing the development of the American Medical Association during the first few years of its existence, Dr. Nathan Smith Davis called attention to the factor which gave force to the activities of the organization. It seemed evident to him that many members had failed to perceive clearly the true relations of the American Medical Association to the medical profession. "They seem to look upon the national organization," he said, "in the same light as a representative civil government, whose acts were laws of binding import and whose basis of representation must consequently be adjusted with the same nice care to the equality of diverse or separate interests." It seemed to be forgotten that the Association was entirely a voluntary organization the acts of which carried with them no other force than the inherent justice of the acts themselves, coupled with the *moral* weight of the body from which they emanated; and that this *moral* weight would bear a close relation to the fulness of representation from those institutions whose interests were most involved in the movements proposed.

1853

NEW YORK CITY

Several years after the preliminary meeting was held in New York in 1846, the American Medical Association met in the Bleecker Street Presbyterian Church. The chairman of the Committee of Arrangements and Reception, Dr. F. Campbell Stewart, expressed the pride of New Yorkers at the triumphant success that had followed the movement originating in their state. At this meeting thirty states and territories, the District of Columbia, the Army and Navy of the United States and the American Medical Society in Paris were represented. The attendance was 573.

A resolution from the Medical Society of Virginia urged the American Medical Association to consider the propriety of appointing some distinguished and well qualified chemist (not a practitioner of medicine) to analyze the prominent nostrums of the day as far as practical and to publish the result of such an analysis monthly in the most extensively circulated newspaper in each state in the Union represented in the Association.

LICENSURE AND EDUCATION

Again the Association indicated its interest in medical education and in epidemiology. Special committees were appointed to urge the passing of legislation for licensure of physicians in the individual states. Indeed one resolution was introduced urging that a student be not admitted to any medical school until he had graduated at some literary institution and was found to possess an English and classical education. Interesting too was a movement to compel the graduates of medical schools to take an oath to conform strictly to the code of ethics of their alma mater and to give to the faculty a right to withdraw the diploma in case the oath should be violated.

A resolution was introduced for the investigation of the value of galvanism as a therapeutic agent.

ACCOMPLISHMENTS OF THE ASSOCIATION

In the presidential address, Dr. Beverley R. Wellford of Virginia summarized in one paragraph the accomplishments of the American Medical Association in its first seven years. He was answering charges made in some quarters that the Association had as yet effected nothing. Some had affirmed that the Association had injured the profession in public estimation by exposing its deficiencies and had thus induced the patronage of homeopathy and other delusions of similar character. To this Dr. Wellford replied:

> But, gentlemen, if it be nothing to have reduced an amorphous, chaotic, professional mass to something like symmetry and order; nothing, to have awakened attention to important defects in preliminary and medical education, and, in some measure, to have removed them; nothing, to have caused the establishment and reorganization of local and State medical societies; nothing, to have caused the enactment of wholesome laws, both by the Federal and State Governments; nothing, to have produced scientific papers of acknowledged ability and erudition; nothing, to have awakened dormant talent, and elicited a vernal bloom, which promises a rich harvest of autumnal fruit; nothing, to have acquired a reputation, which renders even its membership a title of honour and distinction; is it also nothing, by unaided, intrinsic moral power, to have bound in one code of medical ethics, thousands of men in every section of this wide Union, each one free to act according to his own individual views, but yielding them in cheerful obedience to the opinions of the Association, with as much deference and submission as if it were armed with the power and the terrors of penal law? Is it nothing, unendowed with the compulsory authority of legal enactment, or the seductive influence of mileage and per diem pay, annually to convoke such an assembly, as I have now the honour to address? Gentlemen, such a congress, of such materials, and under such circumstances, presents a spectacle of moral beauty, to which the opponents of medical reform cannot be insensible. It must command their respect and admiration, even if it fail to secure their co-operation. I know not, gentlemen, what may be the effect on others of an occasion like this, but for my single self, when I thus recognize the denizen of the city and the forest; him of the frozen north and of the sunny south; him of the mountains, the rivers, and the prairies of the west, with him from the borders of the broad Atlantic bringing their various opinions and prejudices, and casting them together, as a sacrificial offering on the altar of science and professional patriotism; when I see them animated by the same honourable and lofty impulse, and, in fraternal harmony, uniting their efforts to attain the same grand results, I feel an honest pride in my profession and my country, and an abiding confidence, that, to such sons, the high destinies of both may be safely intrusted.

By this time Dr. N. S. Davis had begun to manifest his special interest in the medical literature of the day; he had now become chairman of the Committee on Medical Literature. He presented a report calling attention to the transactions of the individual state medical societies and the various monographs and books that had been published during the year. Much of his report dealt with his concept of the true functions of the editors of medical journals.

The prize essay was an article on "The Cell: Its Physiology, Pathology, and Philosophy; as Deduced from Original [illegible] Which Is Added Its History and Cr[illegible] J. Burnett of Boston.

1854

ST. LOUIS

The President, Dr. Jonathan Knight, was unable to attend the St. Louis session in 1854; hence the address for the occasion was presented by the Vice President, Dr. Usher Parsons of Rhode Island.

The prize essay was that of Dr. Daniel Brainard of Chicago. The title was "Essay on a New Method of Treating Ununited Fractures and Certain Deformities of the Osseous System." Each of the contestants identified his essay with an appropriate quotation. Daniel Brainard chose a quotation from Ambroise Paré, which is one of the great classics of medical science:

> notwithstanding all the pains that I have heretofore taken, I have reason to praise God, in that it hath pleased Him to call me to that branch of Medical practice, commonly called Surgery, which can neither be bought by gold, nor by silver, but by industry alone, and long experience.

Already some attention began to be given to pedagogics in medicine; a resolution was offered, though promptly rejected, "that the practice of professors' reading lectures to their classes, no matter with how much care selected from the musty records of antiquity, is a miserable apology for teaching, is *primâ facie* evidence of their inaptitude to instruct, and is inimical to medical progress."

DRIED MILK

Well in advance of the times also was a resolution offered by Dr. N. S. Davis calling the attention of the Association to the "great sacrifice of health and life which takes place annually, especially among children in large cities, on account of the difficulty of procuring a proper supply of pure and wholesome milk; and the great importance of devising some mode by which the nutritious constituents of the milk can be preserved in their purity and sweetness for such purposes." He exhibited to the Association a specimen of dried milk which had been placed in his hands and which was represented to be capable of preserving all the qualities of the milk perfectly for any length of time. This, it must be remembered, was in the year 1854.

At this time an announcement greeted with great pleasure was made by the local Committee on Arrangements. All the railroads, except the New York and Hudson River Railroad, had granted to the members of the American Medical Association free passage to their homes.

ALCOHOLIC LIQUORS

Another resolution urged that a committee be appointed to examine into and report on the effects of alcoholic liquors taken into the system on health and disease.

A final action failed to be taken on a resolution that the cultivation and practice of specialties in medicine and surgery are legitimate and honorable pursuits and meet the approval of the Association and that the same avenues for announcing his calling to the public that are recognized as proper to the general practitioner are open to the specialist.

On Friday morning, May 6, 1853, the day after the adjournment of the sixth annual meeting of the American Medical Association held in the city of New York, a train of the New York and New Haven Railroad passing through Norwalk, Conn., fell into the Norwalk River through an open drawbridge. Forty-four passengers of the ill fated train were suddenly deprived of life, among them seven physicians returning from the convention. As a memorial to these physicians the convention in 1854 published a record of their medical careers.

1855

PHILADELPHIA

By 1855 the number of prize essays, which had numbered a score or more at previous meetings, had steadily diminished. Only six essays were available for consideration by the Committee on Prize Essays in 1855. Only one of these was considered worthy of notice—a paper on "Statistics of Placenta Previa" by James D. Trask of White Plains, Westchester County, N. Y.

Well in advance of the times, however, was a resolution urging the secretary of the Association to offer every facility possible to the reporters of the public press to enable them to furnish full and accurate reports of the transactions.

As an indication that the nature of man does not change, it became necessary, previous to reading a report on the "Hygrometrical States of the Atmosphere in Various Localities, and Its Influence on Health," which was seriously interrupted by the loud conversation of members, to pass a resolution, unanimously, "that all the desultory conversation of members be done down stairs."

Realizing the importance of vital statistics, a resolution was introduced urging the Association to petition legislative bodies in the individual states to collect their vital statistics.

HOMEOPATHY VS. REGULAR MEDICINE

For the first time the battle between homeopathy and regular medicine reared its ugly head in the convention. Because the legislature of Michigan, in contravention to the charter of the University of Michigan, had put in a chair of homeopathy, a resolution was offered "That any such unnatural union as the mingling of an exclusive system, such as homeopathy, with scientific medicine in a school, setting aside all questions of its untruthfulness, cannot fail, by the destruction of union and confidence, and the production of confusion and disorder, unsettling and distracting the mind of the learners, to so far impair the usefulness of teaching as to render every school adopting such a policy unworthy of the support of the profession." This resolution was passed unanimously by the Association.

THE STATE SOCIETIES

For the first time also the authority of the national body in relation to state societies came into question; it was resolved that no state or local society should be entitled to representation in this Association which had not adopted its code of ethics, that no state or local society which has violated or discarded any article or clause should be entitled to representation and that since the State Medical Society of Ohio had violated one of the articles of the code of ethics by adopting a resolution "That it is not derogatory to medical dignity, or inconsistent with medical honor, for medical gentlemen to take out a patent right for surgical or medical instruments," therefore, be it resolved "that the secretary of this Association be directed to inform the officers of the State Medical Society of Ohio that, unless such action be rescinded, it cannot hereafter be represented in this Association."

1856

DETROIT

The "Firemen's Hall" in Detroit was the place of assemblage for the 1856 session. The number of delegates had fallen to 208, representing nineteen states, the Minnesota Territory and the United States Army.

Perhaps most significant of the considerations were those related to medical literature, urging a wider use of American articles and American medical textbooks in teaching.

The number of essays submitted for prizes had fallen still further; a resolution suggested that hereafter the money be awarded for the best essay founded on original investigations of the author.

A committee was established to classify those diseases which involved a derangement of the mental manifestations.

An expression of thanks was tendered to the Fire Department of the City of Detroit for the use of its large and commodious hall. Also it was resolved "that the urbane deportment and the elegant hospitalities of the profession and private individuals, as well as the polite attentions of citizens generally, demand of this Association a high appreciation of the cultivated manners of this city of the West, and which has tended greatly to enhance the pleasure of the session here of the delegates from abroad."

The President of the Association gloried in the progress that it had made in uniting the medical profession so that it could speak with one voice and in rallying physicians everywhere around higher standards.

AMERICAN MEDICAL LITERATURE

S. D. Gross of Louisville presented the significant report on American medical literature, analyzing the causes for its backwardness in the tradition of the original essay by Oliver Wendell Holmes. His main criticism was a lack of independence in the journalism of that day with its leaning on materials coming from abroad. He urged physicians to utilize their private and hospital practice for the study of cases which should be reported in American medical journals. And he offered as a resolution "That this Association earnestly and respectfully recommend, first, the universal adoption, whenever practicable, by our schools, of American works as textbooks for their pupils; secondly, the discontinuance of the practice of editing foreign writings; thirdly, a more independent course of the medical periodical press toward foreign productions, and a more liberal one toward American; and, fourthly, a better and more efficient employment of the facts which are continually furnished by our public institutions for the elucidation of the nature of diseases and accidents and, indirectly, for the formation of an original, a vigorous and an independent national medical literature.

"That we venerate the writings of the great medical men, past and present, of our country, and that we consider them as an important element of our professional and national glory.

"That we shall always hail with pleasure any useful or valuable works emanating from the English press, and that we shall always extend to them a cordial welcome as books of reference, to acquaint us with the progress of legitimate medicine abroad, and to enlighten us in regard to any new facts of which they may be the repositories."

Significant also was the report of the Committee on Plans for Organization of State and County Societies. It worked toward a unified organization, and it prepared the first constitution and by-laws for a state medical society.

1857

NASHVILLE

Nashville, Tenn., welcomed the doctors for the tenth annual meeting in 1857; bursts of Southern oratory reverberated in the air. Following is a paragraph from the address of welcome by Dr. C. K. Winston:

> You are the representatives of a profession distinguished alike for its antiquity, its scientific attainments and its usefulness. It constitutes the true link between science and philanthropy—science and philanthropy, moral, intellectual and physical. You come from every portion of this glorious republic—from the Kennebec to the Rio Grande—from orange groves and golden sands—from mountains clad in eternal snow and valleys smiling in perpetual verdure. You come not for purposes of self aggrandizement or personal ambition, nor yet to advance the schemes of parties or stir up the antipathies of sections. "You know no North, no South, no East, no West"; but you come as a company of philanthropists, a band of brethren, that you may pour the acquisitions of another year into a common treasury, kneel side by side at a common altar and drink the living water as it gushes from a common fountain. You have come to maintain the dignity, to elevate the ensign of a profession to which you have devoted your lives and to which you have linked your fortunes.

Protests were made against the admission of delegates from the Oglethorpe Medical College, Savannah, on the ground that the professorships had not been filled in physiology and materia medica at its sessions, but investigation revealed that all of the chairs but one had been filled and that the man was sick, so that the college was permitted to have its delegates.

Some of the committees which had regularly reported began to report that they had no report.

Now there began apparently to be some despair at the failure to progress in regulating education. Following a resolution demanding a minimum number of teachers and hours of study, an alternative resolution was offered to the effect that the Association did not have the power to control medical education and that it had most signally failed in its objective and had already introduced elements of discord. It was therefore recommended that a special committee be appointed to advise a system of medical instruction under which all medical institutions should be organized. There was great discussion but to no purpose.

A constitution for the state societies was adopted and, after hearing a number of scientific reports, the convention adjourned.

EDITORIAL OPINION OF THE ASSOCIATION

In 1855 Dr. D. M. Reese, editor of the *American Medical Gazette,* satirically minimized the work of the American Medical Association up to that time, saying:

> The conviction appears to be general, among writers, that notwithstanding the numerous reforms attempted, recommended and resolved on by repeated *"whereases"* and reiterated at every successive meeting by high-sounding resolutions, and published in each volume of the *Transactions,* yet, in *effectuating any one of these, after seven years' trial, the efforts of the Association in this regard have resulted in signal and utter failure.*

Editors of some other medical journals gave rise to sentiments of similar import. Dr. Nathan Smith Davis told them that their announcements of policy were premature. "It must be borne in mind," he said, "that our country is made up of more than thirty separate states; that the Association was, and is, not only destitute of legislative powers itself but also without access to any one legislative body possessing authority to regulate the education and interests of the profession of the whole country."

Little could any one have thought that another half century at least would be required before sufficient public opinion could be mustered within and without the medical profession to undertake a real drive for high standards in medical education.

Dr. B. Dowler, then editor of the *New Orleans Medical and Surgical Journal,* summarized the accomplishments of the first ten years of the American Medical Association in these words:

> As a social and professional *reunion* of kindred spirits and great minds, its memories afford perennial delight. It has given impetus to the progress of medical polity and science; it exercises moral suasion rather than that of authority; it has brought together a bright constellation of intellect, cemented the bonds of friendship among good men and true, and should it fail to effectuate its original and grand finality—that is, a thorough reform in medical education—it will leave a luminous track of light in the moral firmament of the Aesculapian heavens, throughout the expansions of the Republic.

(To be continued)

Clinical Notes, Suggestions and New Instruments

TWO DEATHS ASSOCIATED WITH SUPRADIAPHRAGMATIC VAGOTOMY

CARNES WEEKS, M.D.
BERNARD J. RYAN, M.D.
and
JOE M. VAN HOY, M.D.
New York

Supradiaphragmatic vagotomy has been associated with complications which resulted in death in 2 cases.

CASE 1.—*History.*—S. H., a white man aged 47, an unemployed salesman, was admitted to the First Surgical Division of Bellevue Hospital complaining of severe burning epigastric pain. He had had a known duodenal ulcer since 1931, with massive hematemeses on three occasions. Roentgenograms at another hospital one month before admission to Bellevue had again confirmed the diagnosis of duodenal ulcer. There was no evidence of obstruction, but pain had persisted since 1931 despite diet and an ulcer management regimen which had been punctuated by alcoholic bouts on frequent occasions.

Two years prior to admission he noted the onset of headache, nocturia and frequency. He was examined by a physician and told that he had hypertension. Since that time his bloood pressure had ranged continuously in the vicinity of 220 systolic and 140 diastolic. He had had frequent headaches and had been unable to concentrate for the past two years.

Physical Examination.—The patient was a middle-aged white man of florid complexion who was uneasy and restless. Relevant observations were limited to the following: The apex impulse of the heart was felt at the midclavicular line. The rhythm was regular and the beat was forceful. There were no murmurs. The blood pressure was 210 systolic and 140 diastolic. There was moderate tenderness in the epigastrium

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From the First Surgical (Columbia) Division, Bellevue Hospital.

and both upper quadrants of the abdomen without spasm or rebound tenderness.

Laboratory Examination.—The hemoglobin level of the blood was 13.5 Gm. per hundred cubic centimeters; the white blood cells numbered 6,200; the Wassermann test was negative. Urinanalysis was negative with a specific gravity of 1.015; the nonprotein nitrogen level was 45 mg. per hundred cubic centimeters. Gastric analysis showed that the free hydrochloric acid was 110 units and the total acidity was 130 units one hour after histamine stimulation. A roentgenologic examination of the chest revealed moderate enlargement of the heart in the transverse diameter.

Course.—Because of the duration and severity of the patient's symptoms, it was decided that surgical intervention was indicated for his duodenal ulcer. It was planned to do a supradiaphragmatic vagotomy and if feasible at the time of the operation to perform a left thoracolumbar sympathectomy for his hypertension. He was prepared for the surgical procedure for four weeks on the hospital ward with frequent feedings and the intravenous administration of Amigen. He gained seven pounds (3 Kg.) during this time.

On June 19, 1946 a thoracotomy was performed with removal of the ninth rib on the left side. Both vagal trunks were well developed as they lay beside the lower third of the esophagus. Sections 3 cm. in length of both the right and the left vagus nerves were removed just above the diaphragm. The left thoracolumbar sympathetic chain was then removed from the fifth dorsal to the second lumbar nerve, inclusive, as well as the greater, lesser and least splanchnic nerves in this area. Microscopic examination showed that the tissue removed was typical of sympathetic ganglions and nerves. Subsequent to this surgical procedure, the patient did well, had a good appetite and did not complain of epigastric pain or distress. Gastric dilatation which developed on the fifth and sixth postoperative days was relieved by gastric aspiration.

On July 2, 1946 a right thoracolumbar sympathectomy, similar in extent to that on the left, was performed. The patient did well immediately after the operation but had gastric dilatation which was relieved by aspiration on the third, fourth, fifth and sixth postoperative days. His condition then gradually began to deteriorate. He became difficult to manage on the ward, could not get on with other patients and refused to keep himself clean or to cooperate with other patients. He demanded paraldehyde at frequent intervals and required large doses of chloralhydrate, barbiturate or paraldehyde to furnish adequate sedation. Except for anorexia, his complaints were not referable to his abdomen or his gastrointestinal tract to any degree but consisted chiefly of restlessness, anxiety and irritability. A psychiatric consultant made the diagnosis of anxiety neurosis. During this time he was up and about the ward but had extremely disturbed nights.

On the morning of July 17, 1946, fifteen days after the second stage of his thoracolumbar sympathectomy, the intern on the ward was called because the patient was being especially noisy. At that time he complained of pain in the lower quadrant on the right and left side. Examination of the abdomen was unsatisfactory because of the restlessness and uncooperativeness of the patient; the only positive observation was slight diffuse abdominal tenderness. Two hours later he suddenly went into shock, becoming cold, clammy and comatose, and passed a tarry stool. Blood pressure and radial pulse was unobtainable. He received oxygen, stimulants, 1,500 cc. of whole blood and 500 cc. of plasma but failed to respond and died twelve hours later.

Report of Autopsy.—Relevant observations at autopsy were limited to the following: An examination of the cranial cavity and brain was performed. The heart weighed 640 Gm. and the left side was hypertrophied. On opening the abdominal cavity, a good deal of foul-smelling gas escaped. There was about 1,500 cc. of brownish cloudy fluid and gross food particles in the abdominal cavity. The peritoneal surfaces were rough and not of their usual shiny appearance. The first part of the duodenum showed an indurated ulcerated area, rather sharply demarcated, with a perforation about 2.5 cm. in diameter through which gross particles had passed into the abdominal cavity. Section of tissue of the duodenal lesion revealed the typical microscopic picture of duodenal ulcer.

Comment.—This is the first reported case of a perforation of a duodenal ulcer following vagotomy. However, it is probably also the only case in which vagotomy has been combined with bilateral thoracolumbar sympathectomy. The sympathectomy may well have been the cause of failure here, since simultaneous ablation of the sympathetic nerves could have neutralized the beneficial effects of the vagotomy. The patient's failure to have the acute pain ordinarily associated with a perforated peptic ulcer may have been due to the removal of viscerosensory fibers probably associated with the sympathetic side of the autonomic nervous system.

CASE 2.—*History.*—B. M., a white man aged 55, who had been totally blind for fourteen years, was admitted to the First Surgical Division of Bellevue Hospital on July 11, 1946 complaining of epigastric pain of four days' duration. He had had a duodenal ulcer diagnosed roentgenologically at another hospital nine years previously. He had been treated during the interim on a medical regimen with diet and Sippy treatment. Recurrence of his symptoms required an admission to the medical service of Bellvue Hospital in 1940.

Physical Examination.—The patient was a middle-aged white man who was totally blind. Relevant observations were limited to the following: There were multiple excoriations of the skin of both legs and of the trunk, extending up as high as the neck. There were several lesions suggestive of scabetic burrows. The pupils did not react to light, there was no light perception, and the fundi showed optic atrophy bilaterally. The right arm had been disarticulated at the shoulder, and there was an old amputation of the tip of the right great toe. There was moderate tenderness with slight spasm in the right epigastrium. The heart was regular in rhythm and lacked enlargement, thrills or murmurs. The blood pressure was 140 systolic and 90 diastolic.

Laboratory Examination.—The red blood cell count was 4,110,000; the hemoglobin level was 11.0 Gm. per hundred cubic centimeters. Urinalysis was negative; the stool guaiac test was 3 plus on one occasion; the Wassermann test was negative. The overnight total gastric secretion was 0.430 cc., the fasting acidity was 63 units, the total acidity 89 units. The serum amylase determination was 53.4 units. Roentgenologic examination of the stomach and duodenum showed an ulcer of the first portion of the duodenum without disturbance of gastric motor function.

Course.—The patient was placed on rest in bed and on a progressive Sippy diet with a colloidal suspension of aluminum hydroxide given at the bedside. The scabies was satisfactorily treated with 5 per cent precipitated sulfur in wool fat and white ointment. The eye consultant believed that the optic atrophy of the patient was secondary to poisoning with methyl alcohol. The pain in his epigastrium continued intermittently. Due to the long standing history, the lack of satisfactory response to medicaments and the patient's inability to care for himself properly, it was decided that a surgical operation on the ulcers should be performed.

On Aug. 6, 1946 a thoracotomy was performed with removal of the eighth rib on the left side from the transverse process to the cartilaginous junction. The lung was densely adherent over its costal and diaphragmatic surfaces and was freed by sharp dissection. A small rent which was made in the lower part of the left lobe at the fissure was sutured with interrupted mattress sutures of fine catgut on an atraumatic needle. After freeing and delivering the lower esophagus just above the diaphragm, the right vagus nerve was identified and freed from its attachment to the esophagus for 5 cm. above the diaphragm. A bradycardia resulted, and the upper portion of the nerve was injected with a 1 per cent solution of procaine hydrochloride. About 4 cm. of the nerve was removed.

A few moments after sectioning the nerve, it was noted that the pulse had slowed to a rate of between 60 and 70. Shortly thereafter the anesthetist stated that she was having some difficulty with the patient's respiration. A wet pad was placed over the wound and all manipulations were halted. The anesthetist then noted that the patient's pulse had suddenly become and that we shall always extend to them a cordial welcome as books of reference, to acquaint us with the progress of legitimate medicine abroad, and to enlighten us in regard to any new facts of which they may be the repositories."

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Protests were made against the admission of delegates from the Oglethorpe Medical College, Savannah, on the ground that the professorships had not been filled in physiology and materia medica at its sessions, but investigation revealed that all of the chairs but one had been filled and that the man was sick, so that the college was permitted to have its delegates.

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In 1855 Dr. D. M. Reese, editor of the *American Medical Gazette,* satirically minimized the work of the American Medical Association up to that time, saying:

> The conviction appears to be general, among writers, that notwithstanding the numerous reforms attempted, recommended and resolved on by repeated "*whereases*" and reiterated at every successive meeting by high-sounding resolutions, and published in each volume of the *Transactions,* yet, in *effectuating any one of these, after seven years' trial, the efforts of the Association in this regard have resulted in signal and utter failure.*

Editors of some other medical journals gave rise to sentiments of similar import. Dr. Nathan Smith Davis told them that their announcements of policy were premature. "It must be borne in mind," he said, "that our country is made up of more than thirty separate states; that the Association was, and is, not only destitute of legislative powers itself but also without access to any one legislative body possessing authority to regulate the education and interests of the profession of the whole country."

Little could any one have thought that another half century at least would be required before sufficient public opinion could be mustered within and without the medical profession to undertake a real drive for high standards in medical education.

Dr. B. Dowler, then editor of the *New Orleans Medical and Surgical Journal,* summarized the accomplishments of the first ten years of the American Medical Association in these words:

> As a social and professional *reunion* of kindred spirits and *great minds, its memories afford perennial delight. It has given impetus to the progress of medical polity* and science; it exercises moral suasion rather than that of authority; it has brought together a bright constellation of intellect, cemented the bonds of friendship among good men and true, and should it fail to effectuate its original and grand finality—that is, a thorough reform in medical education—it will leave a luminous track of light in the moral firmament of the Aesculapian heavens throughout the expansions of the Republic.

(To be continued)

Clinical Notes, Suggestions and New Instruments

TWO DEATHS ASSOCIATED WITH SUPRADIAPHRAGMATIC VAGOTOMY

CARNES WEEKS, M.D.
BERNARD J. RYAN, M.D.
and
JOE M. VAN HOY, M.D.
New York

Supradiaphragmatic vagotomy has been associated with complications which resulted in death in 2 cases.

CASE 1.—*History.*—S. H., a white man aged 47, an unemployed salesman, was admitted to the First Surgical Division of Bellevue Hospital complaining of severe burning epigastric pain. He had had a known duodenal ulcer since 1931, with massive hematemeses on three occasions. Roentgenograms at *another hospital one month before admission to* Bellevue had again confirmed the diagnosis of duodenal ulcer. There was no evidence of obstruction, but pain had persisted since 1931 despite diet and an ulcer management regimen which had been punctuated by alcoholic bouts on frequent occasions.

Two years prior to admission he noted the onset of headache nocturia and frequency. He was examined by a physician and told that he had hypertension.' Since that time his blood pressure had ranged continuously in the vicinity of 220 systolic and 140 diastolic. He had had frequent headaches and had been unable to concentrate for the past two years.

Physical Examination.—The patient was a middle-aged white man of florid complexion who was uneasy and restless. Relevant observations were limited to the following: *The* apex impulse of the heart was felt at the midclavicular line. The rhythm was regular and the beat was forceful. There were no murmurs. The blood pressure was 210 systolic and 14 diastolic. There was moderate tenderness in the epigastrium

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From the First Surgical (Columbia) Division, Bellevue Hospital.

and both upper quadrants of the abdomen without spasm or rebound tenderness.

Laboratory Examination.—The hemoglobin level of the blood was 13.5 Gm. per hundred cubic centimeters; the white blood cells numbered 6,200; the Wassermann test was negative. Urinanalysis was negative with a specific gravity of 1.015; the nonprotein nitrogen level was 45 mg. per hundred cubic centimeters. Gastric analysis showed that the free hydrochloric acid was 110 units and the total acidity was 130 units one hour after histamine stimulation. A roentgenologic examination of the chest revealed moderate enlargement of the heart in the transverse diameter.

Course.—Because of the duration and severity of the patient's symptoms, it was decided that surgical intervention was indicated for his duodenal ulcer. It was planned to do a supradiaphragmatic vagotomy and if feasible at the time of the operation to perform a left thoracolumbar sympathectomy for his hypertension. He was prepared for the surgical procedure for four weeks on the hospital ward with frequent feedings and the intravenous administration of Amigen. He gained seven pounds (3 Kg.) during this time.

On June 19, 1946 a thoracotomy was performed with removal of the ninth rib on the left side. Both vagal trunks were well developed as they lay beside the lower third of the esophagus. Sections 3 cm. in length of both the right and the left vagus nerves were removed just above the diaphragm. The left thoracolumbar sympathetic chain was then removed from the fifth dorsal to the second lumbar nerve, inclusive, as well as the greater, lesser and least splanchnic nerves in this area. Microscopic examination showed that the tissue removed was typical of sympathetic ganglions and nerves. Subsequent to this surgical procedure, the patient did well, had a good appetite and did not complain of epigastric pain or distress. Gastric dilatation which developed on the fifth and sixth postoperative days was relieved by gastric aspiration.

On July 2, 1946 a right thoracolumbar sympathectomy, similar in extent to that on the left, was performed. The patient did well immediately after the operation but had gastric dilatation which was relieved by aspiration on the third, fourth, fifth and sixth postoperative days. His condition then gradually began to deteriorate. He became difficult to manage on the ward, could not get on with other patients and refused to keep himself clean or to cooperate with other patients. He demanded paraldehyde at frequent intervals and required large doses of chloralhydrate, barbiturate or paraldehyde to furnish adequate sedation. Except for anorexia, his complaints were not referable to his abdomen or his gastrointestinal tract to any degree but consisted chiefly of restlessness, anxiety and irritability. A psychiatric consultant made the diagnosis of anxiety neurosis. During this time he was up and about the ward but had extremely disturbed nights.

On the morning of July 17, 1946, fifteen days after the second stage of his thoracolumbar sympathectomy, the intern on the ward was called because the patient was being especially noisy. At that time he complained of pain in the lower quadrant on the right and left side. Examination of the abdomen was unsatisfactory because of the restlessness and uncooperativeness of the patient; the only positive observation was slight diffuse abdominal tenderness. Two hours later he suddenly went into shock, becoming cold, clammy and comatose, and passed a tarry stool. Blood pressure and radial pulse was unobtainable. He received oxygen, stimulants, 1,500 cc. of whole blood and 500 cc. of plasma but failed to respond and died twelve hours later.

Report of Autopsy.—Relevant observations at autopsy were limited to the following: An examination of the cranial cavity and brain was performed. The heart weighed 640 Gm. and the left side was hypertrophied. On opening the abdominal cavity, a good deal of foul-smelling gas escaped. There was about 1,500 cc. of brownish cloudy fluid and gross food particles in the abdominal cavity. The peritoneal surfaces were rough and not of their usual shiny appearance. The first part of the duodenum showed an indurated ulcerated area, rather sharply demarcated, with a perforation about 2.5 cm. in diameter through which gross particles had passed into the abdominal cavity. Section of tissue of the duodenal lesion revealed the typical microscopic picture of duodenal ulcer.

Comment.—This is the first reported case of a perforation of a duodenal ulcer following vagotomy. However, it is probably also the only case in which vagotomy has been combined with bilateral thoracolumbar sympathectomy. The sympathectomy may well have been the cause of failure here, since simultaneous ablation of the sympathetic nerves could have neutralized the beneficial effects of the vagotomy. The patient's failure to have the acute pain ordinarily associated with a perforated peptic ulcer may have been due to the removal of viscerosensory fibers probably associated with the sympathetic side of the autonomic nervous system.

CASE 2.—*History.*—B. M., a white man aged 55, who had been totally blind for fourteen years, was admitted to the First Surgical Division of Bellevue Hospital on July 11, 1946 complaining of epigastric pain of four days' duration. He had had a duodenal ulcer diagnosed roentgenologically at another hospital nine years previously. He had been treated during the interim on a medical regimen with diet and Sippy treatment. Recurrence of his symptoms required an admission to the medical service of Bellvue Hospital in 1940.

Physical Examination.—The patient was a middle-aged white man who was totally blind. Relevant observations were limited to the following: There were multiple excoriations of the skin of both legs and of the trunk, extending up as high as the neck. There were several lesions suggestive of scabetic burrows. The pupils did not react to light, there was no light perception, and the fundi showed optic atrophy bilaterally. The right arm had been disarticulated at the shoulder, and there was an old amputation of the tip of the right great toe. There was moderate tenderness with slight spasm in the right epigastrium. The heart was regular in rhythm and lacked enlargement, thrills or murmurs. The blood pressure was 140 systolic and 90 diastolic.

Laboratory Examination.—The red blood cell count was 4,110,000; the hemoglobin level was 11.0 Gm. per hundred cubic centimeters. Urinalysis was negative; the stool guaiac test was 3 plus on one occasion; the Wassermann test was negative. The overnight total gastric secretion was 0.430 cc., the fasting acidity was 63 units, the total acidity 89 units. The serum amylase determination was 53.4 units. Roentgenologic examination of the stomach and duodenum showed an ulcer of the first portion of the duodenum without disturbance of gastric motor function.

Course.—The patient was placed on rest in bed and on a progressive Sippy diet with a colloidal suspension of aluminum hydroxide given at the bedside. The scabies was satisfactorily treated with 5 per cent precipitated sulfur in wool fat and white ointment. The eye consultant believed that the optic atrophy of the patient was secondary to poisoning with methyl alcohol. The pain in his epigastrium continued intermittently. Due to the long standing history, the lack of satisfactory response to medicaments and the patient's inability to care for himself properly, it was decided that a surgical operation on the ulcers should be performed.

On Aug. 6, 1946 a thoracotomy was performed with removal of the eighth rib on the left side from the transverse process to the cartilaginous junction. The lung was densely adherent over its costal and diaphragmatic surfaces and was freed by sharp dissection. A small rent which was made in the lower part of the left lobe at the fissure was sutured with interrupted mattress sutures of fine catgut on an atraumatic needle. After freeing and delivering the lower esophagus just above the diaphragm, the right vagus nerve was identified and freed from its attachment to the esophagus for 5 cm. above the diaphragm. A bradycardia resulted, and the upper portion of the nerve was injected with a 1 per cent solution of procaine hydrochloride. About 4 cm. of the nerve was removed.

A few moments after sectioning the nerve, it was noted that the pulse had slowed to a rate of between 60 and 70. Shortly thereafter the anesthetist stated that she was having some difficulty with the patient's respiration. A wet pad was placed over the wound and all manipulations were halted. The anesthetist then noted that the patient's pulse had suddenly become imperceptible, and on examination the heart beat was found to be absent. An opening was made in the pericardium, and massage of the heart was performed rhythmically. Oxygen was administered under pressure and 0.6 mg. of atropine was administered intravenously. After several minutes the heart began to beat feebly and irregularly. After continued massage for a few more minutes, the heart action became stronger and resumed a normal rhythm for a short while. It was necessary to massage the heart intermittently to maintain this rhythm.

When the heart was observed to be beating regularly and more forcefully, rib spreaders were removed and preparation was made to close the thoracic cage. The action of the heart, however, again became feeble and irregular and massage was reinstituted. Intravenous procaine hydrochloride (50 mg.) and repeated doses of atropine were administered to the patient for another hour. Intercardiac epinephrine was finally used as well without success. Normal cardiac action could not again be reestablished despite one hour and twenty minutes of cardiac massage, and the patient was pronounced dead at that time. Permission for an autopsy was not obtained. Microscopic examination of the specimen of vagus nerve removed showed typical nerve fibers.

Comment.—Since permission for autopsy was not obtained, assessment as to the cause of death must be in part speculative. The difficulty developed directly after manipulation and division of the right vagus nerve. Since respirations persisted after the circulatory collapse it may well be inferred that death was primarily associated with disturbance in the cardiovascular mechanism.

A somewhat similar case is reported by Moore, Chapman, Schulz and Jones.[1] The patient expired approximately forty-eight hours postoperatively of difficulties either related to the anesthesia or that could have resulted from hyperirritability of the autonomic nervous system with the setting up of vagovagal reflexes and resultant cardiac standstill. Since this experience the authors [1] have routinely anesthetized both vagus nerves above the point of manipulation with procaine hydrochloride and have given rather large doses of atropine either before or during the operation.

Reid and Brace [2] showed electrocardiographic changes consisting of extra systoles, both auricular and ventricular, delayed conduction time, slowing of the heart and ventricular escape during tracheal and bronchial manipulations with the various mechanical appliances used in closed types of anesthesia. Soma Weiss and Ferris produced similar electrocardiographic tracings by inflating a balloon in an esophageal diverticulum.[3] This leads one to suggest that manipulation of the vagus itself may often have a profound and occasionally an extremely deleterious effect on the cardiac mechanism.

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[1] Moore, F. D.; Chapman, W. P.; Schulz, M. D., and Jones, C. M.: Transdiaphragmatic Resection of the Vagus Nerves for Peptic Ulcer, New England J. Med. **234:** 242-251 (Feb. 21) 1946.

[2] Reid, L. C., and Brace, D. E.: Irritation of the Respiratory Tract and Its Reflex Effect upon the Heart, Surg., Gynec. & Obst. **70:** 157-162 (Feb.) 1940.

[3] Weiss, S., and Ferris, E. B.: Adams Stokes Syndrome with Transient Complete Heart Blocks of Vagovagal Reflex Origin: Mechanism and Treatment, Arch. Int. Med. **54:** 931-951 (Dec.) 1934.

A Peripheral Nerve Registry.—Perhaps the most significant contribution made by army neurosurgeons during the war had to do with peripheral nerve injuries. This is a problem which can be solved only during war. The busiest civilian clinics do not see enough material to permit authoritative conclusions as to the management of these injuries. Unfortunately, in World War I, in spite of the large number of peripheral nerve injuries, the opportunity was lost, because no comprehensive and accurate follow-up studies were made. We are now in process of finding out exactly what happens to peripheral nerve injuries and how they are best treated. A peripheral nerve registry was instituted in the early months of 1944 and to date some 8,000 peripheral nerve sutures have been registered in it and are being reported on, as to progress, at regular intervals. Plans have been made to transfer the registry to the Veterans Administration for the final phase of the study, with Colonel Woodhall, who initiated the undertaking, remaining in charge of it.—Spurling, R. Glen: Neurosurgery in World War II, *Bull. U. S. Army M. Dept.*, December 1946.

Council on Pharmacy and Chemistry

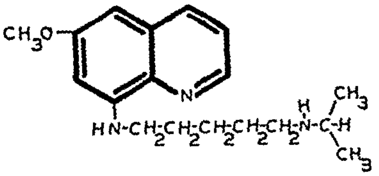
REPORT OF THE COUNCIL

The Council has authorized publication of the following statement.

AUSTIN SMITH, M.D., *Secretary.*

PENTAQUINE, NONPROPRIETARY NAME FOR 6-METHOXY-8-(5-ISOPROPYLAMINOAMYLAMINO)-QUINOLINE

Recently there has been developed a new effective antimalarial chemical compound known as SN 13,276 having the following structural formula:



6-Methoxy-8-(5-isopropylaminoamylamino)-quinoline.

The compound was investigated through parallel studies with pamaquine and other 8-aminoquinolines, conducted at civilian centers under the sponsorship of the Committee on Medical Research of the Office of Scientific Research and Development and various army installations.

Through a spokesman for the Board for the Coordination of Antimalarial Studies, it was proposed that the Council give consideration to the name Pentaquine as a suitable designation for this compound.

After due consideration of its antimalarial status and deliberation to ascertain the chemical suitability and freedom from confusion with other names now in use in this country, the Council voted to adopt the proposed name Pentaquine as the nonproprietary name for the new antimalarial compound previously designated as Sn 13,276.

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

PHENOBARBITAL (See New and Nonofficial Remedies, 1946, p. 530).

The following dosage forms have been accepted:

THE HARROWER LABORATORY, INC., GLENDALE, CALIF.

Tablets Phenobarbital: 32 mg.

THE VALE CHEMICAL CO., INC., ALLENTOWN, PA.

Tablets Phenobarbital: 16 mg., 32 mg. and 0.1 Gm.

THIAMINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1946, p. 618).

The following dosage forms have been accepted:

WILLIAM H. RORER, INC., PHILADELPHIA

Tablets Thiamine Hydrochloride: 1 mg. and 5 mg.

Solution Thiamine Hydrochloride, 50 mg. per cc.: 10 cc. vials. Preserved with 0.5 per cent chlorobutanol.

BACTERIAL VACCINE MADE FROM HEMOPHILUS PERTUSSIS (See THE JOURNAL, Jan. 5, 1946, p. 31).

The following dosage forms have been accepted:

E. R. SQUIBB & SONS, NEW YORK

Pertussis Vaccine (Single Strength): 8 cc. and 24 cc. vials. 10,000 million *H. pertussis* per cubic centimeter. Preserved with phenol 0.5 per cent.

Pertussis Vaccine (Double Strength): 5 cc. and 20 cc. vials. 20,000 million *H. pertussis* per cubic centimeter. Preserved with phenol 0.5 per cent.

PERTUSSIS VACCINE ALUM PRECIPITATED (See THE JOURNAL, Jan. 5, 1946, p. 31).
The following dosage form has been accepted:

THE UPJOHN CO., KALAMAZOO, MICH.

Pertussis Vaccine (Alum Precipitated): 3 cc. vials (one immunization) and 10 cc. vials (three immunizations). 10,000 million *H. pertussis* per cubic centimeter. Preserved with phenol 0.5 per cent.

PERTUSSIS VACCINE COMBINED WITH DIPHTHERIA TOXOID (See THE JOURNAL, Jan. 5, 1946).
The following dosage form has been accepted:

THE UPJOHN CO., KALAMAZOO, MICH.

Pertussis Vaccine, Diphtheria Toxoid, Combined, Alum Precipitated: 3 cc. vials (one immunization) and 10 cc. vials (three immunizations). 10,000 million *H. pertussis* per cubic centimeter. Preserved with sodium ethyl mercuri thiosalicylate 1 : 10,000.

PENICILLIN OINTMENT (See THE JOURNAL, Nov. 2, 1946, p. 515).
The following dosage form has been accepted:

SCHENLEY LABORATORIES, INC., LAWRENCEBURG, IND.

Penicillin Calcium Ophthalmic Ointment: 3.54 Gm. tubes. Each gram contains 2,000 units of penicillin calcium in white petrolatum, U. S. P.

EPHEDRINE SULFATE (See New and Nonofficial Remedies, 1946, p. 286).
The following dosage form has been accepted:

THE HARROWER LABORATORY, INC., GLENDALE, CALIF.

Capsules Ephedrine Sulfate: 24 mg. and 49 mg.

Council on Physical Medicine

The Council on Physical Medicine has authorized the following report for publication on the recommendation of its Consultants on Contraceptive Devices. The Council wishes to express its appreciation for the valuable assistance rendered in the preparation of this report to its consultants: Drs. Nicholas J. Eastman, Walter W. Greulich, Joseph Hughes, Andrew C. Ivy (Chairman), Walter J. Meek and Ephraim Shorr.

HOWARD A. CARTER, *Secretary.*

REQUIREMENTS FOR ACCEPTABILITY OF CONTRACEPTIVE DEVICES

The following requirements for the acceptability of contraceptive devices of a physical nature, such as diaphragms and caps, stems and rings, tampons and sponges, devices for insertion, condoms and sheaths, have been proposed by the Consultants on Contraceptive Devices of the Council on Physical Medicine. These have been adopted by the Council, but it should be emphasized that they may be changed from time to time as the evidence indicates.

I. *Acceptable Evidence:*

A. Medical evidence to be acceptable must have been collected by physicians with special experience in the field of contraception or obstetrics and gynecology.

B. Evidence regarding the physical and chemical characteristics of the device must have been collected by individuals competent in the field.

II. *Efficacy:*

The device shall meet the following test of effectiveness: Each patient shall be observed for a minimum of twelve months. The minimum patient-years experience shall be seventy-five years. This may be obtained by observing 75 patients for one year, 50 patients for eighteen months or preferably 38 patients for two years or 25 patients for three years. Only patients pronounced as presumably fertile shall be used. If patients are excluded from the series on the basis of their being irregular users, the number excluded and the nature of the evidence justifying their exclusion shall be provided. The device shall provide a degree of protection as great as is consistent with good practice concerning the article under consideration, the protection to be obtained in women who have been compared with others habitually practicing no contraception.

III. *Harmlessness:*

A. Evidence shall be submitted showing that 100 or more couples have used the device on six or more occasions without subjective injury or sensations of pain, distress or discomfort. The refusal rate and the cause thereof shall be provided for this group of 100 patients and for the group of patients used for obtaining seventy-five or more patient-years of experience.

B. Evidence shall be required showing that the device had been used by 20 or more patients on twenty-one successive days without irritation or injury or evidence of physical damage as disclosed by examination with a speculum. This evidence is to be supplied in addition to similar evidence obtained on the group of patients used to establish efficacy in seventy-five patient-years of experience.

C. Where the device is a brand of a type previously known to or accepted by the Council on Physical Medicine, the evidence required by the two preceding paragraphs may be waived.

IV. *Design:*

A. The design of the device and accessories shall be satisfactory to the Council.

B. If a syringe applicator or nozzle is furnished for use in connection with a jelly or cream, it shall be sufficiently translucent to permit the detection of air which might lead to inadequate dosage.

V. *Durability:*

A. Condoms must have a shelf life of at least one year, and the date of expiration shall be stamped on the package so as to be readily seen by the purchaser. The shelf life test shall be conducted at a temperature of 37 C. and a humidity of from 10 to 30 per cent. At the end of the test or the expiration date stamped on the package, the condom shall not permit the passage of air when it is distended with air under a pressure of 0.2 pound per square inch and immersed in water.

B. The package containing a diaphragm shall be stamped with the date of manufacture. The instructions packed with the diaphragm shall show the date of manufacture, and the instructions shall provide the life expectancy on the basis of evidence submitted to the Council regarding the shelf life and the use life in combination, and when used with a known and acceptable jelly or cream. At the end of the life expectancy claimed, the diaphragm shall not permit the passage of water or a methylene blue solution under a pressure of ½ pound per square inch, the test being conducted so as to detect leaks about the rim.

VI. *Directions to Users and Advertising:*

A. The directions shall include a warning that the user should not expose the device to agents such as ordinary oils and greases or hot water, which will damage the device. Evidence shall be submitted showing the ordinarily available agents which damage and do not damage the device.

B. The directions shall include the appropriate means for cleansing the device.

C. The directions packed with each device whose performance depends on an intact membrane shall direct the user to inspect the device for holes and tears and to discard it if one is found.

D. The advertising and directions of the manufacturer shall make it clear that contraceptive diaphragms (and caps), tampons and sponges are intended for use in conjunction with spermicidal jelly or cream and should direct attention only to those accepted by the Council on Pharmacy and Chemistry.

E. The advertising and directions must not state or imply that the appropriate diaphragm or cap, or other device, can be chosen without the aid of a physician.

F. The advertising and directions and other printed matter packed with the device shall be satisfactory to the Council.

G. The results of the investigation by the Council of devices submitted will be published, but the use of the "seal of acceptance" will not be allowed.

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SATURDAY, DECEMBER 21, 1946

THE HOUSE OF DELEGATES MID-WINTER SESSION

The first interim session of the House of Delegates was held in Chicago at the headquarters of the American Medical Association, December 9 to 11. The attendance by practically every delegate entitled to be present or by an alternate indicated the interest in the work of the organization.

Among the topics considered attention centered particularly on the report relative to the public relations of the Association; the revision of the Constitution and By-Laws; continued progress in the development of prepayment plans for medical costs; the medical care of miners, with a report by Admiral Boone on the survey now being conducted under his direction; the establishment of representation for the Veterans Administration in the Fellowship of the Association and in the House of Delegates; membership for general practitioners on hospital staffs; the plans for celebration of the centennial of the American Medical Association, and the report of the judicial council on brutal experiments by Nazi physicians. Other resolutions dealt with the functions of various agencies of the American Medical Association.

In this issue appear some of the minutes of the proceedings of the House of Delegates. The remainder will be published in issues that follow. Much of the discussion was held in executive session, and because it deals with intimate affairs of the Association these proceedings will appear in condensed form. As was emphasized in The Journal after the annual session of the Association last June, the report on public relations led to actions of the Board of Trustees making immediately effective certain recommendations. Thus there is now in the headquarters of the Association a division of public relations under an executive assistant to the general manager. This division will have the responsibility for the public relations activities of all councils, bureaus, publications and other agencies and operations of the Association. The activities include the preparation of a news letter for county and state medical societies; releases of information to the press and radio; assistance in the preparation of pamphlets and brochures, and the general function of interpretation of the Association and its work to the public.

A significant action of the House of Delegates was the amendment of the By-Laws so that general officers and delegates will now be eligible for election to the presidency of the Association. In former years it has been necessary for the person selected for such honor to resign from the position held before nomination could be made.

So significant were many of the actions taken by this session of the House of Delegates that it is hoped every physician will study the minutes carefully. The amazing rapidity of growth of the Association and the multiplicity of its functions have indicated for some time the necessity for more formal assignment of various activities and considerations to its various agencies. No doubt increased efficiency will become apparent as these measures begin to be properly established and coordinated.

FRIEDLÄNDER'S PNEUMONIA

Friedländer in 1882 described an encapsulated bacillus[1] which he believed was the chief etiologic agent of lobar pneumonia. His report was based, unfortunately, on postmortem findings, which, judged by more modern bacteriologic experience, are of doubtful value. A few years later other investigators[2] demonstrated conclusively that the common cause of lobar pneumonia is the pneumococcus. Nevertheless the concept that Friedländer's bacillus is associated with pneumonia and other respiratory tract infections pervaded textbooks and periodical medical literature for more than fifty years. Some investigators found that pneumonia due primarily to Friedländer's bacillus is relatively uncommon, if not a clinical rarity. Other writers have contended that in a small though definite percentage of cases of pneumonia Friedländer's-bacillus is the primary cause.

Baehr, Shwartzman and Greenspan[3] reported that only 2 proved cases of primary Friedländer's pneumonia were observed at the Mount Sinai Hospital in New York in thirty-six years. The 198 Friedländer bacillus infections reported by them were in large part of the gastrointestinal tract, the genitourinary tract and the biliary tract; pneumonia and other upper respiratory infections were fourth in their list. Of 61 cases in which the intra-abdominal suppuration was apparently due to this organism, 53 were abscesses of the appendix. Friedländer's bacillus was far more commonly found in infections following perforations of the intestinal tract than in infections of any other organ. They reported

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[1] Friedländer, Carl: Ueber die Schizomyceten bei der acuten fibrinösen Pneumonie, Virchows Arch. f. path. Anat. **87:** 319, 1882.

[2] Fraenkel, A.: Weitere Beiträge zur Lehre von den Mikrococcen der genuinen fibrinösen Pneumonie, Ztschr. f. klin. Med. **2:** 437, 1886. Sternberg, Y. M.: The Pneumonia-Coccus of Friedländer, Am. J. M. Sc. **90:** 106, 435, 1885.

[3] *Baehr, George; Shwartzman, Gregory,* and Greenspan, Edward B.: Bacillus Friedländer Infections, Ann. Int. Med. **10:** 1788 (June) 1937.

46 cases of suppurative infections of the biliary tract, in 43 of which Friedländer's bacillus was present in the pus in pure culture. The mortality among the 46 cases was high, owing in part to abscesses of the liver secondary to infection of the gallbladder or biliary passages. Recently[4] the first case of primary peritonitis caused by Friedländer's bacillus was reported. In this unusual case, in which rapid recovery occurred under sulfadiazine therapy, the pharynx was thought to be the port of entry of the bacillus to the blood stream through which the peritoneum was infected. Friedländer's bacillus, cultures of which were taken from the pharynx in this case four days after admission, is a normal inhabitant of the upper respiratory tract in a small percentage of normal persons.

Solomon[5] reviewed the pneumonia records of four medical divisions of the Bellevue Hospital from 1920 to about 1937 and found 32 acute cases of primary pneumonia caused by Friedländer's bacillus alone, not including 10 chronic cases and a large number in which Friedländer's bacillus was found in association with the pneumococcus, streptococcus or tubercle bacillus. Friedländer's pneumonia, Solomon believes, is much more common than is generally realized. The diagnosis can be readily suspected and quickly confirmed if its distinguishing features are kept in mind. The prognosis is more serious than in pneumonia due to other organisms.

Friedländer's bacillus (Bacillus mucosus capsulatus, the pneumobacillus or Klebsiella pneumoniae) is sometimes long, sometimes almost coccoid, nonmotile and gram negative. Julianelle[6] classified the strains by immunologic reactions into three specific types, A, B and C, which comprise the great majority of strains noted clinically. The distinctions in type depend on the presence of a specific carbohydrate in the capsular material, slightly different for each type, which is the soluble specific substance excreted in the urine. As with other organisms, both smooth and rough strains are found. Smooth strains produce capsules, are type specific and are highly virulent; the rough strains do not produce capsules and are not pathogenic.

Friedländer's pneumonia is said to comprise from 0.5 to more than 5 per cent of all cases of pneumonia. In the 5,000 cases of pneumonia reviewed by Solomon, among which 32 due to Friedländer's bacillus were found, the incidence was about 0.6 per cent, which was considered unquestionably low for reasons stated.

Certain characteristics distinguish the cases from the usual cases of pneumonia or other pulmonary conditions. Friedländer's pneumonia occurs in the later decades, the average age being 48.7 years. There is a distinct preponderance of males over females, the ratio being 7 to 1. Hemoptysis frequently occurs with the onset. Herpes is not common. The temperature is less regular. Low grade fever is much more common than in pneumococcic pneumonia. Involvement of the upper lobe and of more than one lobe is frequent. The sputum is a brick red, homogeneous emulsion of blood and mucus, in contrast to the ropy rusty sputum of pneumococcic pneumonia. Friedländer's bacillus is found in pure culture in the sputum and frequently in the blood culture. The mortality rate is high, and death occurs in an earlier stage of the disease than in pneumococcic pneumonia.

THERAPEUTIC POSSIBILITIES OF CURARE

Claude Bernard demonstrated that curare acts not on the nerve or on the muscle but on the myoneural junction. He pointed out the necessity of isolating the active chemical principle of the crude drug. This was accomplished by King and by Wintersteiner and Dutcher. The isolated pure crystalline substance, tubocurarine, belongs to a group of compounds known as *quaternary ammonium salts.* These salts possess the property of paralyzing neuromuscular conduction at the myoneural junction. The present day concept of curare therapy, according to Schlesinger,[1] does not propose to paralyze the myoneural junction but to create a block to the abnormal impulses imposed on the myoneural junction by the disease. A therapeutic effect is obtained without the loss of voluntary power.

Schlesinger reports the therapeutic effects in a group of 200 patients who have received a total of 1,500 injections of a suspension of d-tubocurarine chloride in white wax and oil. The proportions of the suspension are 3 per cent tubocurarine in 4.8 per cent wax in peanut oil. One cc. of the suspension contains the equivalent of 175 units of standard curare. The preparation is well standardized and its action predictable, milligram for milligram. It is given by either the subcutaneous or the intramuscular route. The following types of disorders were reported in this series: I. Muscle spasm, as in (*a*) direct trauma to muscle, (*b*) low back syndrome, (*c*) orthopedic deformities with reflex spasm, (*d*) myositis, (*e*) arthritis. II. Spasticity, as in (*a*) degenerative diseases of the central nervous system, (1) multiple sclerosis, (2) disseminated sclerosis, (3) familial lateral sclerosis; (*b*) spinal cord injury, (*c*) cerebrovascular disease, (*d*) tumors of the brain and spinal cord. III. Spasticity with dystonic features (Little's disease, cerebral diplegia). IV. Dystonia and athetosis. V. Rigidity, as in Parkinson's syndrome.

In the group characterized by spasm the results were gratifying, all degrees of spasm yielding to treatment, although when the pain was based on root compression, residual root pain remained after complete reduction of reflex muscle spasm. This response, according to Schlesinger, can be used diagnostically in ruling out root compression as a causative factor in a clinical picture. In the spastic group it was found generally possible to increase motor efficiency by eliminating the increased excitability of the stretch reflex. It was always possible to increase the patient's motor power by reducing the spastic element. Voluntary power was unaffected at dosage levels sufficient to relieve spasticity. In every case the gait was improved by this effect. Retraining enhanced this new level of performance strikingly. In the group of birth injuries, cerebral diplegia or spasticity with dystonic features, improvements were obtained in this sequence: (1) speech, (2) ability to sit quietly, (3) gait and (4) eating, writing and the performance of all skilled motor activities. These patients have maintained their improvement on doses twice weekly. In dystonia and athetosis it was possible to reduce spontaneous movements so that patients could sit quietly for reasonable periods, make active exercise and motor training possible and improve sleep. In patients with Parkinson's disease it was possible partially to relieve rigidity and to improve sleep. Toxic effects on any organ or system or changes in body economy or general well being were not noted. There was no tendency to habituation. There exist certain contraindications to the curare therapy, in particular any myasthenic tendency and kidney disease.

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[4] McDonald, Roger K., and Klingon, Gerald H.: Primary Peritonitis Caused by Friedländer's Bacillus, Arch. Surg. **53:** 477 (Oct.) 1946.

[5] Solomon, Saul: Primary Friedländer Pneumonia, J. A. M. A. **108:** 937 (March 20) 1937.

[6] Julianelle, L. A.: A Biological Classification of Encapsulatus Pneumoniae (Friedländer's Bacillus), J. Exper. Med. **44:** 113 (July), 683 (Nov.), 735 (Dec.) 1926; The Distribution of Friedländer's Bacilli of Different Types, *ibid.* **52:** 539 (Oct.) 1930.

[1] Schlesinger, E. B.: Recent Advances in the Use of Curare in Clinical Practice, Bull. New York Acad. Med. **22:** 520 (Oct.) 1946.

Current Comment

SYNTHESIS OF PENICILLIN

Eleven months ago the first announcement of the probable chemical nature of penicillin, a joint report of the American and British investigators in this field,[1] appeared in *Science*. At this time two possible formulas were presented which differed only in subtle molecular rearrangements. Recently du Vigneaud and his associates[2] have succeeded in synthesizing penicillin; they coupled penicillamine, a compound related to the unnatural isomer of the amino acid cysteine, with an oxazolone. It was proved conclusively, by using many of the newer tools of science, that penicillin was synthesized in these reactions. The actual reactions involved in this synthesis are still too complicated to warrant the definite statement that the synthesis proves the structure of the compound. While the amounts of penicillin synthesized were minute, the great importance of this accomplishment is that new drugs related to penicillin can now be produced. There is no indication that this accomplishment will permit the production of synthetic penicillin commercially in the near future or in any way affect the price of present commercial supplies.

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[1] Chemistry of Penicillin, Science **102**: 627 (Dec. 21) 1945.

[2] du Vigneaud, V.; Carpenter, F. H.; Holley, R. W.; Levermore, H. H., and Rochele, J. R.: Science **104**: 431 (Nov. 8) 1946.

ARMY DEFERMENT OF INTERNS

A recent directive from the War Department provides for an extension of deferments for 1,500 interns who hold army commissions. The directive is given elsewhere (page 1017) in this issue. For 1,200 interns the extension will be from July 1, 1947 to Jan. 1, 1948. For 300 there will be a deferment from July 1, 1947 to July 1, 1948. In regard to the latter group, "priority will be given to university and teaching hospitals." It is urged by the Council on Medical Education and Hospitals that hospitals utilize these men on an internship basis so that residency places available for veterans who are physicians will not be reduced in number. Intern officers and hospital authorities should become familiar with the new regulations at once, since deferments will be granted on a first come, first served, basis until the quota is filled.

EFFECT OF ANTIRETICULAR CYTOTOXIC SERUM ON THE HEALING OF FRACTURES

In 1944 Bogomolets[1] reported that experiments on 800 rabbits indicated that small doses of antireticular cytotoxic serum accelerated the healing time of fractures about one and one-half times as compared with the healing of fractures in nonstimulated animals. Large doses of the serum apparently retarded the healing time of the fractured bones. Control experiments utilizing the serum of a nonimmunized animal of the same species did not have the stimulating effect that antireticular cytotoxic serum had, thus demonstrating that the stimulating action of the antireticular cytotoxic serum is not one of a nonspecific protein reaction. Recently Straus and his associates[2] repeated the same experiments with slight modifications. One hundred and fifty-six female rabbits were separated into four groups, one being given "stimulating" doses of antireticular cytotoxic serum another "depressing" doses of antireticular cytotoxic serum, a third normal goat serum equivalent in volume to the "stimulating" dose of antireticular cytotoxic serum and the fourth normal goat serum in a volume equivalent to the "depressing" dose of antireticular cytotoxic serum. The extent of healing of the fractures was evaluated roentgenographically, by gross and microscopic examination of the tissue and by measuring the breaking strength of the line of union. The results indicated differences between the "stimulated" and "depressed" groups of animals and their respective controls. Statistical evaluation of the breaking strength of the healed fractures indicated significant differences between each of the groups and its control. The experiment was repeated on two additional occasions with similar results. The Los Angeles investigators conclude that stimulation of the healing of experimentally produced fractures in rabbits can be induced with small doses of antireticular cytotoxic serum and depression of healing with large doses, as claimed by the Soviet investigators.

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[1] Bogomolets, O. A.: Influence of the Antireticular Cytotoxic Serum (ACS) on Healing of Bone Fractures, Kiev, 1944, *reviewed in* The Journal, August 24, p. 1467.

[2] Straus, R.; Horwitz, M.; Levinthal, D. H.; Cohen, A. L., and Runjavac, Mildred: *Studies on Antireticular Cytotoxic Serum: III*, J. Immunol. **54**: 163 (Oct.) 1946.

ORGANIZATION SECTION

PROCEEDINGS OF THE CHICAGO SESSION

MINUTES OF THE SUPPLEMENTAL SESSION OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION, HELD IN CHICAGO, DECEMBER 9-11, 1946

HOUSE OF DELEGATES

First Meeting—Monday Morning, December 9

The House of Delegates convened in the Assembly Room of the building of the American Medical Association, 535 North Dearborn Street, and was called to order at 10:15 a. m. by the Speaker, Dr. R. W. Fouts.

Preliminary Report of the Reference Committee on Credentials

Dr. G. Henry Mundt, Chairman, stated that 133 delegates had registered up to the present time. He requested the wishes of the House with respect to the seating of the delegate from the Section on the General Practice of Medicine, who was not provided for under the apportionment of delegates in effect at this session. On motion of Dr. Holman Taylor, Texas, seconded by several delegates and carried, the House voted to seat at this session the delegate from the Section on the General Practice of Medicine.

Roll Call

The Secretary called the roll and announced that a quorum was present.

Adoption of Proceedings of San Francisco Session in 1946

On motion of Dr. J. Stanley Kenney, New York, seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried, the proceedings of the San Francisco session of the House of Delegates held in 1946 were adopted as printed.

Address of Speaker, Dr. R. W. Fouts

The Vice Speaker, Dr. F. F. Borzell, Pennsylvania, presided while the Speaker of the House read his address as follows, which was referred to the Reference Committee on Reports of Officers:

Mr. Speaker, Members of the House of Delegates and Guests:

It is again my privilege and distinct pleasure to call to order this body of distinguished workers. In so doing I desire to express my sincere appreciation for the implied confidence expressed by you in placing this responsibility on me.

That this House is composed of distinguished men with far reaching vision is evidenced by the many policies evolved during past years that are now serving to guide American medicine through the vicissitudes of these changing times. I bespeak for this session's activities a continuation of these principles and policies and a sober consideration of all questions presented at this session. I believe this to be the most important session held since I became a member of this House, which is more than a quarter of a century, as our actions today may set the pattern for the future of organized medicine. Let us approach each problem in a spirit designed for the purpose of accomplishing the greatest good for American medicine, as it affects our patients as well as ourselves.

Permit me to assure you again that it is your Speaker's untrammeled and unrestrained effort to see that the long established rules of procedure of the House are observed and carried out to the letter.

Your Speaker would again urge that more attention be given by the delegates to the hearings on the various resolutions by the respective reference committees. Far too often has a reference committee reported that only two or three, and sometimes no one, appeared to discuss pending resolutions.

Every delegate has the right to expect and will be given the privilege of the floor to ask a question or express his views on any matter pending before this House. May I urge that you be alert and exercise this privilege to the end that only the best possible results may obtain from our deliberations. Tremendous responsibilities rest with each and every delegate. Let us discharge these obligations in such manner as to reflect credit on every one concerned and obviate some of the criticism that has at times emanated from misunderstanding or the uninformed.

And now, conforming to precedent, it becomes my duty to request that we pause to pay tribute to those Fellows who have served in this House and whose life's activities have ceased since our last session. The list of names will be presented at our June meeting.

Reference Committees

In the selection of reference committees, your Speaker has again given consideration to the representation accorded each state on various Councils, Bureaus and the Board of Trustees. An earnest endeavor has been made to give just representation to every state.

The Speaker requested permission to appoint three additional reference committees, which was granted by the House. The personnel of all reference committees as appointed by the Speaker follows:

SECTIONS AND SECTION WORK

Wingate M. Johnson, North Carolina, Chairman.
Roy B. Henline, Section on Urology.
Jesse D. Hamer, Arizona.
Albert F. R. Andresen, New York.
Claude R. Keyport, Michigan.

RULES AND ORDER OF BUSINESS

Edward P. Flood, New York, Chairman.
James P. Kerby, Utah.
Mather Pfeiffenberger, Illinois.
Richard D. Simonton, Idaho.
William D. Stovall, Wisconsin.

MEDICAL EDUCATION

J. F. Hassig, Kansas, Chairman.
A. W. Adson, Minnesota.
Leland S. McKittrick, Massachusetts.
Alfred S. Giordano, Indiana.
Henry B. Mulholland, Virginia.

HYGIENE AND PUBLIC HEALTH

Don F. Cameron, Indiana, Chairman.
Thomas S. Cullen, Maryland.
Charles R. Rountree, Oklahoma.
Thomas K. Gruber, Michigan.
Thomas A. Foster, Maine.

LEGISLATION AND PUBLIC RELATIONS

Charles H. Phifer, Illinois, Chairman.
Thomas P. Murdock, Connecticut.
John J. Masterson, New York.
Lowell S. Goin, California.
Edward Jelks, Florida.

AMENDMENTS TO CONSTITUTION AND BY-LAWS

Allen H. Bunce, Georgia, Chairman.
K. S. J. Hohlen, Nebraska.
James Z. Appel, Pennsylvania.
Hugh P. Smith, South Carolina.
Edward H. McLean, Oregon.

REPORTS OF OFFICERS

John W. Cline, California, Chairman.
A R. McComas, Missouri.
James Q. Graves, Louisiana.
Ivan Fawcett, West Virginia.
Raymond L. Zech, Washington.

REPORTS OF BOARD OF TRUSTEES AND SECRETARY

Clarence G. Bandler, New York, Chairman.
Edgar P. McNamee, Ohio.
Guy W. Wells, Rhode Island.
James P. Wall, Mississippi.
L. J. Kosminsky, Arkansas.

CREDENTIALS

G. Henry Mundt, Illinois, Chairman
A P Nachtwey, North Dakota.
H. B Everett, Tennessee.
Charles F. Strosnider, North Carolina.
Raymond F. Peterson, Montana.

MISCELLANEOUS BUSINESS

William A Coventry, Minnesota, Chairman.
R B Anderson, Texas.
George A. Woodhouse, Ohio.
Warren L. Allee, Missouri.
William F Costello, New Jersey.

EXECUTIVE SESSION

Elmer Hess, Pennsylvania, Chairman.
William Weston, Section on Pediatrics.
J. B. Lukins, Kentucky.
Holman Taylor, Texas.
Deering G Smith, New Hampshire.
W. T. H Baker, Colorado.
Thomas F. Thornton, Iowa.

TELLERS

James Beebe, Delaware, Chairman.
John W. Green, California.
Theodore H. Harwood, Vermont.

SERGEANTS-AT-ARMS

Frank E. Reeder, Michigan, Chairman.
H. Russell Brown, South Dakota
Moreton J. Thorpe, Nevada.

MEDICAL SERVICE

Herbert H. Bauckus, New York, Chairman.
L. Howard Schriver, Ohio.
George P. Johnston, Wyoming.
Joseph H. Howard, Connecticut.
J. Stanley Kenney, New York.

EMERGENCY MEDICAL SERVICE

Walter G. Phippen, Massachusetts, Chairman.
C B Conklin, District of Columbia
Stephen E Gavin, Wisconsin.
George Braunlich, Iowa.
Grover C. Penberthy, Section on Surgery, General and Abdominal.
Arden Freer, U. S. Army.
John Harper, U. S. Navy.

Address of the President, Dr. H. H. Shoulders

The Speaker presented the President, Dr. H. H. Shoulders, who addressed the House as follows:

Mr. Speaker and Members of the House of Delegates:

It was with my entire approval that the decision was made that you would not hear an address from the President and the President-Elect, because such action would delay the proceedings of the House. But while I have the floor and may not get it again, I should like to take occasion to make two or three observations.

First I should like to observe that we are meeting now in a different atmosphere from that which existed in July and from that which has been in existence for quite some time. We now are in an atmosphere that approaches freedom—the freedom to go forward in the accomplishment of the great mission of medicine.

I have no suggestion with respect to change of fundamental policies. On the contrary, I think their usefulness and effectiveness and wisdom have been demonstrated in the crucible of time and experience, and fundamental policies should not be altered.

Second, there should be no let-up in our efforts to extend medical care as far as possible, and the adoption of new financial technics which will make it more available, probably—the financing of it at least—to people of moderate means.

I would make the observation also that my contact with the profession has been rather broad for me in the last six months, and I have formed the impression that the American Medical Association is not a weak organization but, on the contrary, is a strong organization. It is an organization with a past, a past of which we can be proud, and a future of which we can be hopeful.

Address of the President-Elect, Dr. Olin West

The Speaker presented the President-Elect, Dr. Olin West, who addressed the House as follows:

Mr. Speaker, I thank you for your very gracious reception. I was informed there were to be no speeches by the President and President-Elect. I will take time only to do one thing, and that is to commend especially the last sentence in the address delivered by Dr. Shoulders.

I have confidence that the American Medical Association, with all the progress that it has made, will continue to progress in its efforts to promote the art and science of medicine, in spite of any bickering, in spite of any destructive criticism. I believe that the profession and the public still have confidence in the American Medical Association, and I could give you many reasons for that belief.

I wish I could take enough of your time to tell you some of those reasons and to tell you of the progress that has been made and is being made today in carrying out the aims and objects of this Association as defined in its Constitution.

I hope the deliberations of this House at this session will contribute to further progress on the part of this organization, which, in my opinion, is the greatest of its kind in all the world.

I thank you.

REPORTS OF OFFICERS

Report of Board of Trustees

Dr. R. L. Senseních, Chairman, Board of Trustees, presented the following report of the Board of Trustees, a mimeographed copy of which had been distributed to each member of the House, and which was referred to the Reference Committee on Reports of Board of Trustees and Secretary:

To the Members of the House of Delegates of the American Medical Association:

The following ad interim report relative to the functions and activities of the various Councils, Bureaus and Departments of the Association is respectfully submitted. This will be augmented by a supplementary report to be presented personally by the Chairman of the Board of Trustees.

The Journal of the American Medical Association

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION has now reached the highest point of circulation in its history, approximating over 130,000 weekly. The scope of its content is controlled to some extent by the shortage of paper and of personnel, but it now includes adequate presentation of practically every phase of the advancement of medical science and the interest in medical affairs. Recently THE JOURNAL has begun publication of portions of the "History of the American Medical Association" with a view to the publication of the complete work in book form in time for the Centennial Celebration.

Special Journals

The special journals of the American Medical Association continue to maintain leadership in their fields, but the Association Press has been greatly handicapped in recent months by a shortage of personnel and by labor regulations which greatly diminish the amount of time available for the services of the personnel at hand. Hence practically all of the special periodicals are appearing slightly late, and it is impossible to say, until difficulties with labor shall have been adjusted, when it will be possible again to restore these publications to their usual schedules.

Hygeia, the Health Magazine

During the past four years the circulation of HYGEIA, the Health Magazine, has been held down because of the shortage of paper. A year ago a small increase in paper tonnage was granted, so that for January 1946 it was possible to print 155,000 copies. The press run on the December 1946 issue was 192,000, and it is expected that beginning January 1947 a circulation of 200,000 or better will be maintained, depending on the supply of paper. HYGEIA is greatly in need of additional reading pages. As soon as feasible, it is hoped to increase the number of pages in each issue from the present 80 to 96 or 112 pages.

Most of the increased circulation of HYGEIA has been obtained from select fields, such as physicians, dentists, schools, libraries, nurses and health teaching groups. During the past year, exhibits have been presented at the annual conventions of the American Medical Association, the National Education Association, the American Nurses Association and the American Public Health Association.

Cooperative Medical Advertising Bureau

The Cooperative Medical Advertising Bureau, established in 1913, was reorganized in December 1945 and had its most successful year (fiscal period December 1945 through November 1946). Net advertising sales exceeded $583,000 representing a gain of approximately $125,000 over the preceding year. Gross sales before agency discounts are estimated at $653,000. New and increased business written during 1946 exceeds $142,000. A good portion of the new business extends into 1947. The actual revenue disbursed to the thirty-five state medical journals that are members of the Cooperative Medical Advertising Bureau exceeded $583,000, from which the Bureau's actual operating expense amounting to approximately $20,000, or less than 5 per cent, was deducted.

Several meetings of the Advisory Committee to the Bureau were held during the year and all matters advocated have been complied with, including establishment of a monthly news bulletin to keep the journals informed of progress made and to provide helpful hints on advertising makeup, current listings of accepted products, notice of meetings and other pertinent facts.

Dr. Julian P. Price of South Carolina was elected as a member of the Advisory Committee to succeed Dr. John S. Bouslog of Colorado, whose term expires in December 1946. Dr. George F. Lull succeeded Dr. Olin West as member ex officio. The Bureau has been enlarged, and innovations and needed changes have been made in Bureau procedures. It is anticipated that the Cooperative Medical Advertising Bureau will continue to increase its value to the journals which it represents, from a remunerative as well as from an informative point of view.

Directory Department

The work of the Directory Department is to maintain a biographic record of the physician with his latest address, from which a directory of physicians can be published. There is also issued in this department, on the first and fifteenth of each month, a supplementary service to the Directory that lists the changes in the medical profession. Since the publication of the 1942 Directory, 34 018 names of new physicians have been added to the files, 113,726 changes of address have been recorded and 15,501 names have been dropped on account of death or for other reasons.

The work of the department has greatly increased because of the return to civilian practice of 55,000 medical officers who have terminated their service with the government. Some 40,000 of these physicians have been located and listed in the supplementary report service, but the other 15,000 have not been heard from or their mail has been returned marked "moved—address unknown."

As it has been more than four years since a Directory has been published, requests by telephone and mail for information about physicians have tripled. Requests for data on applications for membership in county medical societies, American boards of examiners in specialties and membership in special medical societies, along with letters from alumni associations to check addresses, make up a good share of this work. Inquiries are being received from men formerly in military service who are trying to locate physicians who treated them during the war in order to establish disability claims. In addition, a number of physicians are trying to locate other physicians they met while in the armed forces. Before the war three clerks handled requests for such information, now six are required.

The principal reason for the delay in publication of a new American Medical Directory is the shortage of clerical help, but the lack of labor in the printing department and the scarcity of paper also are factors.

Mailing and Order Department

The activities of the Mailing and Order Department have increased considerably during the past months. The rate of increase is about 22 per cent, although the increase in billing alone is almost 100 per cent. This unusual increase in billing orders resulted from a decision made late in 1945 that all orders from physicians on their formal letterheads were to be billed, whereas previously advance remittance was requested. The work of the department has been handicapped considerably by inability to obtain and retain adequate personnel and by the shortage of many book items.

Activities in the stock and shipping room likewise have increased.

The outgoing first and third class mail service has greatly increased in the past year as the result of the addition of new and the expansion of existing departments in the headquarters offices.

Council on Pharmacy and Chemistry

The Council on Pharmacy and Chemistry has continued its basic work of examining the merits of medicinal preparations. This includes editing and publishing the annual volume of New and Nonofficial Remedies and the Annual Reprint of the Reports of the Council, of answering inquiries of physicians and of cooperating with other headquarters offices. At the present time new editions of Useful Drugs, the Epitome of the U. S. P. and N. F. and the A. M. A. Interns' Manual are in preparation; the existing stocks of all these have been practically exhausted.

In addition, the Council has actively pursued the postwar expansion and reorientation of its activities. This is best epitomized in the proceedings of the Council's recent meeting on November 1 and 2. Preceding this meeting the Council held a conference with representatives of the pharmaceutical industry on the subject of the newly revised rules of the Council. The conference was characterized by a remarkable spirit of good will and cooperation sparked by a frank statement of the manufacturers' representatives on points of difficulty in application of the new rules. Full agreement was reached on all essential points, and the resulting modifications will be published in the near future. Incidentally, it may be remarked that the Council's office has been swamped with presentations of products from firms who are now striving to bring their policies into conformance with Council principles as well as from already recognized manufacturers of products which can now be made acceptable under the revised nomenclature rulings.

At the Council meetings which followed the conference with the manufacturers, the agreements reached in the conference were ratified and a further revision, or rather clarification, of the rules was authorized. The Council heard a report from Drs. Reed and Viehoever of the U. S. Department of Commerce on medical and pharmaceutical information obtained from German war records and agreed to receive and consider any further reports the Technical Industrial Intelligence Division might submit. In a discussion of the warnings required by the Food and Drug Administration to be placed by pharmacists on packages of Thiouracil prescribed by a physician, the Council considered the desirability of so amending the Federal Food, Drug and Cosmetic Act as to place solely with the physician the responsibility for issuing any needed warning in the prescribing of toxic products. It was agreed that physicians should be urged to a more lively appreciation of their responsibility in prescription and administration of drugs known to have inherent dangers for the patient. The Council considered the desirability of a report on the present status of the use of blood and blood derivatives and voted to consider, with a view to sponsorship, a report on this subject. The Council heard an informal report by Dr. Milton Veldee on the activities of the National Institute of Health in the consideration and licensure of biologic and other medicinal preparations and proposed the preparation of a statement on this and on the activities of the Food and Drug Administration for the information of the medical profession, the Council further authorized the preparation of a report on the present status of questionable vaccines. The Council considered the possibility of serving as advisory consultant to government departments and/or commercial agencies in the distribution of the products of atomic fission for experimental study or actual medical use. The Secretary was instructed to inquire as to what responsibilities the Council might be required to assume in giving such service. Considerable discussion was devoted to the subject of what medical agents might be safely advertised to the public. It was agreed to make further study of this question on the basis of reports to be prepared and presented on various classes of agents proposed for direct promotion to the public. The Council considered the feasibility of encouraging excellence in the exhibits of pharmaceutical manufacturers at the annual sessions of the Association and voted to ask the Board of Trustees to consider the presentation of suitable awards for exhibits especially noteworthy for scientific, research or informational interest. Further consideration was given to the dangers from the promotion and use of high potency vitamin D preparations in the treatment of arthritis, and a further report on the prescribing of massive doses of vitamin D in this and other conditions was authorized.

HEADQUARTERS STAFF

The staff is returning to prewar strength and at the present time consists of three medical men besides the Secretary, three laymen who carry on office routine and seventeen women who act as secretaries, stenographers, typists and file clerks and one who undertakes special literature research projects. However, the new and expanded activities of the Council will require further expansion of personnel, especially at the professional and secretarial levels.

The Therapeutic Trials Committee

The Therapeutic Trials Committee was formally organized in April with the appointment of a full time secretary. Requests for clinical investigations of several pharmaceutical products have already been received and acted on by the Committee. Steps have been taken to coordinate the work of the Committee with other agencies interested in research such as the National Research Council and the U. S. Public Health Service.

In order to provide maximum service to investigators and pharmaceutical houses, information on the interests of clinical investigators and on the available facilities for clinical research is being collected. So far nineteen institutions, medical schools and hospitals have been visited by the secretary, 89 deans, professors and other persons interested in clinical research have been interviewed and information concerning the interests of 311 clinical investigators has been obtained.

As an aid to clinical investigators and for the purpose of facilitating the rapid development of knowledge concerning new therapeutic agents and procedures, the possibility of holding conferences of research workers in certain fields in which investigations are proceeding simultaneously in various centers is being explored. Such conferences would be held only if there is a reasonable probability that such a meeting would facilitate the research and provide substantial benefit both to the investigators and to the medical profession.

Steps have been taken to prepare reports for publication dealing with general problems relating to the proper conduct of clinical research. One such report on "The Costs of Clinical Research" is scheduled for early publication.

The Chemical Laboratory

During 1946 the Chemical Laboratory assisted the Council on Pharmacy and Chemistry in the examination and preparation of tests and standards for a number of new drugs, such as demerol hydrochloride, furacin, benadryl hydrochloride, thiouracil, tridione, monocaine formate, monocaine hydrochloride, ethynyl estradiol, sulfathalidine and ceepryn.

Laboratory reports on dosage forms of a wide variety of U. S. P. and N. F. drugs were also prepared in connection with Council consideration. A partial list of such products includes aminophylline, bismuth subsalicylate in oil, delvinal sodium, diethylstilbestrol dipropionate, ephedrine sulfate, mannitol hexanitrate, pentobarbital sodium, sulfadiazine, epinephrine, aluminum hydroxide, diethylstilbestrol, niacinamide, phenobarbital, sulfathiazole, ascorbic acid, calcium levulinate, zephiran chloride and sodium dehydrocholate.

The problem of suitable standards for amino acid preparations has received much attention, and consideration of products such as amigen, protolysate, lactamin and parenamine is progressing.

The Laboratory has also been concerned with standards for natural estrogens from pregnancy urine.

Some new products currently before the Laboratory for examination are diethylstilbestrol dipalmitate, choline dihydrogen citrate, merodicein, aluminum dihydroxy aminoacetate, sodium *p*-amino-hippurate, *p*-amino benzoic acid and dicumarol.

Council on Physical Medicine

Among the problems considered by the Council in 1946, the following are representative:

The Council is prosecuting its survey of methods for artificial respiration which are being used by lay organizations, life-saving crews, the Coast Guard and police and fire departments. Since undertaking these surveys the Council has clarified several controversial aspects of artificial respiration. A research project to investigate in the laboratory various methods of artificial respiration has been supported by funds from the Board of Trustees. This research is being carried on under the direction of Dr. Andrew C. Ivy.

The Council voted to undertake the consideration of thermometry in the practice of medicine. The accuracy, efficiency, calibration and other problems related to clinical thermometers will be studied. The committee has been appointed, and this work is now going forward under the direction of Dr. George Morris Piersol.

Several ultraviolet lamps recommended for disinfecting purposes have been considered. In general, the claims advanced for the efficacy of these products are exaggerated. The Council has found it necessary to withdraw acceptance of one of the disinfecting ultraviolet lamps which had been on the accepted list.

The Council gave consideration to products for the relief of allergic hypersensitiveness. Several mattress and pillow covers were considered and accepted. A new product was placed on the market which was considered and accepted, namely a pillow made of glass fibers. This product competes favorably with pillows made of feather substitutes and, as a matter of fact, it may prove to be a widely used substitute for goose feathers as a filling for pillows.

Radon ointments (Alphatron Radon Ointment) has been marketed to the profession for the treatment of radiation injuries, skin diseases and rheumatism as well as other conditions. A report of rejection has been prepared jointly with the Council on Pharmacy and Chemistry. It is the opinion of the Councils that unwarranted, exaggerated and misleading claims are being made for the ointment. The investigation is being continued.

Ultraviolet irradiation of the blood: Although many therapeutic claims are made for the Knott Hemo-Irradiator, the chief claim is the alleged successful treatment of asthma. In the opinion of the Council, this device is not efficacious and does nothing which cannot be accomplished by simpler means.

In the course of the year the Council voted to adopt a seal which has a format comparable to the seals of the Council on Pharmacy and Chemistry and the Council on Foods and Nutrition.

Consultants on Audiometers and Hearing Aids: The article "Tentative Standard Procedure for Evaluating Percentage of Hearing Loss in Medicolegal Cases" has been released for publication. The revised audiogram chart was adopted and published. Dr. Hallowell Davis of Boston accepted appointment as consultant to replace Dr. Horace Newhart, deceased. Dr. Burt R. Shurly resigned. Six hearing aids were accepted and one was rejected.

Consultants on Contraceptive Devices: The "Minimum Requirements for Acceptability of Contraceptive Devices" were adopted by the Council and sent to manufacturers of contraceptive devices for comment and suggestion. The requirements were referred to THE JOURNAL for publication. Three devices have been submitted for consideration.

Consultants on Education: The consultants recommended that an American Board of Physical Medicine and a Section on Physical Medicine of the American Medical Association be established. Dr. George D. Wilson accepted appointment as consultant.

Consultants on Electrocardiographs: "Minimum Requirements for Acceptable Electrocardiographs" were compiled in rough draft and sent to six manufacturers of electrocardiographs for comment and criticism. The requirements are not complete and are still undergoing revision. One electrocardiograph has been submitted for consideration, but the report is not complete.

Consultants on Occupational Therapy: The "Manual for Occupational Therapy" has been revised and released for publication. It will be ready for distribution Jan. 1, 1947.

Consultants on Ophthalmic Devices: An article entitled "What Is Orthoptics" (first paper) has been published. Consultants have voted to sponsor articles on contact lenses, artificial eyes and orthoptics (second paper). Articles on contact lenses and orthoptics are being considered at the present time.

Consultants on Respirators: Three respirators have been submitted for consideration. They are undergoing investigation at the present time.

Consultants on Roentgen Rays and Radium: A joint meeting of the Consultants on Roentgen Rays and Radium and the Consultants on Atomic Energy with the Council on Industrial Health and the Council on Physical Medicine is called for Dec. 12, 1946. The present status of the therapeutic efficacy of radium, radon and radioactive isotopes will be discussed and an outline of the Council's future activities in these fields will be proposed. On the agenda will be the compilation of requirements for acceptance of radium, radon and radon products.

The lack of raw materials and the labor shortage have restricted the output of physical therapeutic appliances. Appliances are being sold, but in most instances the firms have not been able to supply the demand. For the most part these appliances are made according to the specifications of formally accepted apparatus.

The successful employment of physical medicine during World War II has had a great influence on the acceptance of physical medicine by the general practitioner. As a result, physical medicine has gained in stature.

Council on Foods and Nutrition

The basic work of the Council on Foods and Nutrition has to do with its food acceptance program and nutrition education. In this report are enumerated the services and programs now in effect which were initiated before Jan. 1, 1946, those initiated during 1946 and those authorized or contemplated at the meeting of the Council in November.

The services and programs initiated before Jan. 1, 1946 which are still in effect and being continued are (1) the study of new food products for possible Council acceptance; (2) the review of all food and nutrition advertising copy; (3) the review of general educational advertising; (4) the conduct of the vitamin D milk program, which involves fluid, evaporated and dried milks; this requires the review of assays on each accepted product and the checking of a large number of labels and advertisements for accuracy of statement; (5) the conduct of a program aimed to encourage the production of fruit juices with a high natural level of vitamin C; (6) the iodized salt program; (7) the flour enrichment program; the Council led in the early shaping of public opinion relative to this program; (8) the corn enrichment program; (9) the preparation of Council reports and Council sponsored reports on problems of food and nutrition in health and disease; the Council believes that expansion of this program would be of value; (10) the preparation of replies to letters of inquiry; (11) the conduct of an informal consultation service relative to food and nutrition problems; (12) book reviews and critical reviews of pertinent subjects; the Council office hopes to supply more of these.

The services, programs and studies initiated in 1946 are as follows: 1. All foods bearing the Council seal that were accepted more than two years ago are being restudied and reconsidered. 2. The vitamin D milk program has been brought up to date. 3. The Council's booklets "Rules" and "Decisions" are to be revised. 4. A protein hydrolysate committee was appointed to work with a similar committee from the Council on Pharmacy and Chemistry. 5. A study interrupted by the war of the methods of ice cream manufacture and its role in nutrition is to be continued. 6. The importance of sanitary measures in cheese manufacture is to be studied. 7. Methods of evaluating foods as sources of vitamins and minerals are to be studied. 8. Data on the subject of nutrition teaching methods and objectives in schools of medicine are to be procured. 9. In cooperation with the Bureau of Health Education, the Council is developing a series of radio broadcasts on the subject of foods and nutrition. 10. As part of a program to increase interest in nutrition, the Nutrition Foundation has consented, at the suggestion of the Council, to make *Nutrition Reviews* available gratis to the fourth year students of a selected group of medical schools. 11. Ways and means of increasing the usefulness of the Council to the medical student, the physician and the public are to be studied.

The services and programs authorized or studied at the meeting of the Council on November 21 are (1) a report to the Board of Trustees on the subject of iodized salt, (2) the development of scientific exhibits, (3) revision of the Handbook on Nutrition, (4) the role of beverage bases, (5) the problem of standards for baby foods, (6) a pilot study of the methods and effectiveness of nutrition education in a small group of medical schools, perhaps among the most important of the proposed studies, is to be conducted by Drs. Elvehjem and Youmans and the Secretary of the Council and (7) a cooperative effort with the Pediatric Research Society in the preparation of nutrition teaching aids for pediatrics.

The responsibilities of the Council have increased as the need for new services has become apparent. The present staff is inadequate to accept the challenges being offered at the present time. The Council needs the continued interest and support of the Association in all these projects because they are vitally concerned with nutrition in health and disease.

Council on Industrial Health

Principal developments since the last report of the Council on Industrial Health have been as follows:

PUBLIC RELATIONS

World Health Organization.—Information is not yet available regarding the status of industrial hygiene in the proposed World Health Organization. In all likelihood a mixed committee will be appointed consisting of public health experts, representatives of the International Labour Office and of the World Health Organization itself to consider matters of social insurance and industrial hygiene. Meanwhile the United Nations organization is establishing itself in New York and is setting up a health program for its employees, who will likely number about two thousand.

The International Labour Office.—This has reestablished its medical division under the direction of Dr. Marcos Charnes of Chile. The medical activities, which included valuable bibliographic services, were discontinued as a result of the war. Conferences have been held with the director of the safety division of the International Labour Office, which has already been reestablished in Geneva.

Pan American Relations.—On approval of the House of Delegates, conferences with representatives of Canada and of Latin American countries have indicated the great desirability of regular discussion of industrial health developments in these countries, perhaps by establishing an annual or biennial Pan American Industrial Health Congress.

Public Law 658 Enacted by the Seventy-Ninth Congress.—This is an act to provide for health programs for government employees, restricted essentially to preemployment and periodic physical examinations, control over working environment and health counseling. Members of the Council on Industrial Health had previously appeared at hearings in favor of this bill if necessary safeguards were incorporated.

The Division of Industrial Hygiene in the U. S. Public Health Service.—This has been reorganized for improved efficiency of its field activities and states relations and to reestablish research facilities in the division itself. In current appropriations for the U. S. Public Health Service, funds are for the first time specifically earmarked for industrial hygiene services.

American Management Association.—A meeting has been held with the president of the American Management Association. It is expected that a useful working relationship can be developed with this organization, particularly in educational work among industrial firms not large enough for full time medical services.

National Bituminous Coal Mines Wage Agreement.—The Council has been particularly interested in the medical implications of the National Bituminous Coal Mines Wage Agreement. Since the last meeting of the House of Delegates, representatives of the Council on Industrial Health and the Council on Medical Service have participated in conferences at Williamson, W. Va., and in Washington, D. C. Visits of inspection have also been made in the coal mines area with the survey teams assigned by the U. S. Navy. The Council on Industrial Health has been particularly interested in the absence of industrial health services in the soft coal mines and has brought this fact to the attention of the surveying groups on several occasions. The factors of general medical care, including prepayment plans for medical services and hospitalization, have been the particular problem of the Council on Medical Service.

The Coal Mines Wage Agreement strongly suggests that health and welfare will be important factors in all future collective bargaining. It is difficult to predict in what manner and to what degree the conventional methods of industrial medical service will change. The Council on Industrial Health feels that herein lie many opportunities for constructive medical leadership.

Medical Services Operated by Labor Unions.—In consideration of greater labor participation in industrial medical affairs, the Council expects to bring up to date its information about existing medical services operated by labor unions.

PROFESSIONAL RELATIONS AND SERVICE

The Seventh Annual Congress on Industrial Health.—This was conducted in Boston Sept. 30-Oct. 2, 1946 with the Massachusetts Medical Society and the Council of the New England State Medical Societies as cosponsors. The meeting was regarded as one of the most successful congresses yet conducted and convinced the Council that future meetings of this kind should be held in various parts of the country instead of exclusively in Chicago as heretofore. These congresses bring important developments in the field of industrial medicine, surgery and hygiene to the attention of the profession at large and demonstrate to physicians the great opportunities for medical service that lie in the industrial health field.

Field Activities.—These have continued and the Council staff has participated in several regional conferences on industrial health. In these field services the Council strongly upholds the principle that professional standards are a prerogative of physicians in industry, that these standards must be based on scientific and ethical principles and that medical progress in the field must depend on good medical education and medical organization.

Since it is important to acquaint the public as well as industry with the considered point of view of the profession along these lines, a speakers' bureau is being organized with volunteer speakers from all the principal industrial areas.

Professional Education and Placement.—Opportunities for professional training in industrial health are steadily improving in such centers as Wayne University, Yale University, New York University, Columbia University and Long Island College of Medicine. The demand for qualified physicians in industry has held up remarkably well in the early postwar months; in fact, the demand exceeds the available supply. Medical veterans and others who are interested in industrial medicine as a career are using the Council's placement service in substantial numbers. In general, requests received from industry for qualified medical assistants are referred to a county medical society secretary or industrial health committee in the hope that the place can be filled locally. If not, names of applicants on file are supplied.

Status of the Section on Preventive and Industrial Medicine and Public Health.—The status of this section has been a matter of concern to the Council as well as to many practitioners in these fields. The Council therefore recently resolved that the best interests of the medical profession can from this point on be more effectively served by a separate Section on Occupational Health and Medicine and that the proper authorities in the American Medical Association be requested to take this matter under advisement.

SCIENTIFIC DEVELOPMENT

Aluminum Prophylaxis and Therapy in Silicosis.—A joint conference was held on October 31 with the Council on Pharmacy and Chemistry and its Therapeutic Trials Committee regarding the present status of the prevention and treatment of silicosis with aluminum. The position taken was to the effect that use of aluminum for these purposes is still in the experimental stage, that continued competent observation over a long period is necessary to assay treatment adequately and that there should be no curbs placed on continued research and investigation.

Atomic Energy.—The Council is deeply interested in the organization of the Board of Consultants on Atomic Energy under the sponsorship of the Council on Physical Medicine. Since it is proposed to use nuclear energy in industry as a source of power, the question of occupational risk is of considerable importance. A symposium on atomic energy in industry and medicine under the joint auspices of the Council on Physical Medicine and the Council on Industrial Health was an outstanding event of the Seventh Annual Congress on Industrial Health.

WORKMEN'S COMPENSATION

The National Conference Committee on Workmen's Compensation.—This committee has been active during recent months. Those activities affecting medicine particularly have been largely assigned to the Council on Industrial Health for primary investigation and report. These deal with reform in medical testimony, disability evaluation, rehabilitation, elevation of standards of medical care for the industrially disabled and greater participation in workmen's compensation administration by medically trained people with essential qualifications. The Council is represented actively on other subcommittees dealing with the simplification and uniformity of report forms and the adoption of a standard nomenclature and uniform statistical methods. Other subcommittees of the National Conference Committee on Workmen's Compensation are paying particular attention to administrative details such as prompt payment of compensation benefits and reduction in hearings and appeals. Each subcommittee is empowered to seek technical advice and assistance from other interested groups. The Council has taken advantage of this provision and sought help from physicians and others especially equipped to assist in the necessary groundwork. These reports will be presented to the parent organizations of the participants for additional study and, if necessary, ratification.

The work of the National Conference Committee was reviewed at the recent convention of the International Association of Industrial Accident Boards and Commissions. Representatives of the Council attended and participated in a symposium on medical service in workmen's compensation.

HEADQUARTERS STAFF

Dr. H. R. Hennessy has joined the staff of the Council to maintain close relations with committees on industrial health in the state and county medical societies and with other professional groups in the field having important interests in industrial health.

The Council has obtained the services of Capt. E. W. Brown, recently retired from the Medical Corps of the U. S. Navy, to act as executive officer for the Council's Committee on Scientific Development. He will make regular evaluations of industrial medical education and research, develop a clearing house on industrial hygiene and toxicology, and work closely with the committees on industrial health which have been set up in the sections of the Scientific Assembly.

Bureau of Health Education

The general work of the Bureau of Health Education proceeds with normal evidences of growth. The present personnel of the Bureau consists of a Director, an Associate Director, a Medical Consultant in Health and Physical Fitness, an Educational Consultant in Health and Physical Fitness and secretarial and clerical assistants. The two Consultants in Health and Physical Fitness were added to the staff August 16 and September 16, respectively, as authorized by the Board of Trustees.

Correspondence

The general correspondence of the Bureau with cooperating lay organizations, health departments, physicians and medical societies is well in excess of 5,500 units, which will establish a new high for the Bureau. Included with a majority of the replies was literature dealing with a wide variety of physical disorders. This literature is being constantly revised and added to as a means of keeping it abreast of new developments in medicine and surgery. More than a thousand inquiries were referred to the Bureau from health education exhibits in the Cleveland Health Museum, the Newark Health Museum and the Chicago Museum of Science and Industry and as a result of health exhibits at various state or national medical and public health meetings.

Loan Collections

Seventy-six loan collections were sent out by the Bureau. This represents a slight increase over the previous year. It is noted that requests for these loan collections are being received in increasingly larger amounts from lay individuals with special scientific training. Proportionately, requests from physicians are decreasing. It would appear that the latter development has been the result of increased service on the part of state and county medical societies, many of which now have a large amount of this type of information available to physician members.

Radio Broadcasting

Radio broadcasting was begun in January 1946 on the NBC network under the title "Doctors at Home" and continued for twenty-six weeks. It proved to be the most successful series thus far broadcast in the twelve years of dramatized broadcasting. In addition, physicians broadcast talks on three nationwide networks and on all radio stations in San Francisco during the annual session.

Negotiations have been begun with other networks with a view to placing programs on them as well as on NBC. Thus far one promising attempt with CBS has failed, but the situation is by no means unfavorable for success along several lines, including CBS.

Electrical Transcriptions

Electrical transcriptions have continued to form a major part of the Bureau's activity. It is estimated that during 1946 there will be a total of more than 350 series lent, with local broadcasts numbering between 4,000 and 4,500 on approximately 120 outlets, mostly those not reached by network programs.

Television

On April 2, 1946 the first of a series of television programs was presented by the Bureau of Health Education over Station WBKB, Balaban & Katz, Chicago. A statement heralding this pioneer venture in health education appeared in the March 23 issue of The Journal. The possibilities cited in that statement have materialized much as was forecast. Acceptable technics have been worked out with the active cooperation of the television station personnel. It has been found possible to integrate dramatization, sections from available motion picture films and discussions by physicians, specialists or otherwise, into acceptable programs that are believed to present health lessons in an extremely forceful manner. It is expected that further refinements in technic will be developed as the Bureau continues this activity as a public service contributed by Station WBKB.

Full Time Public Health Units

In accordance with instruction received from the Board of Trustees, the Bureau sent a circular letter to all state medical societies calling their attention to the resolution passed by the House of Delegates some time ago advocating the establishment of county, joint county or district public health units on a full time standardized basis for the entire continental United States.

Replies have been received from Wisconsin, Illinois, Nevada, Michigan, Maryland, Vermont, Missouri, Indiana, New Mexico, Tennessee, New York and Alabama. In most instances these states were already on record with their own resolutions supporting the resolution of the House of Delegates. Only one county in one state gave evidence of active opposition to the idea.

Mental Hygiene Work by State Medical Societies

As instructed by the Board of Trustees, the Bureau sent a circular letter to state medical societies calling their attention to the resolution about the importance of mental hygiene work by state medical societies.

Replies have been received from Hawaii, Kansas, Texas, Washington, Florida, Colorado, Wyoming, Minnesota, New York, Tennessee, North Dakota, Michigan, Nebraska, Nevada, Wisconsin, Kentucky, Alabama, Connecticut, the District of Columbia and Indiana. In most instances the information contained in these letters indicated that the state medical society already had a committee on mental hygiene. Some of these committees have been functioning actively for many years.

Health and Physical Fitness Program

A source file is being prepared which already includes materials on school health and physical education from thirty-eight states and many professional and nonprofessional organizations.

The consultants have reviewed material and made suggestions for two state groups concerned with curriculum planning in health and physical education.

An outline has been prepared for the revision of "Health Inspection of School Children," which will be submitted to the Joint Committee on Health Problems in Education of the American Medical Association and the National Education Association for approval and subsequent development for publication.

A report of the National Committee of the National Conference for Cooperation in Health Education, "The Functions and Education of Health Personnel in Relation to the School Health Program," has been reviewed by the consultants previous to its publication.

The consultants, with the approval of the Board of Trustees, have accepted invitations to membership on the National Committee on Standards for Interscholastic Athletics of the American Association for Health and Physical Education and the National Committee on Standards and Surveys on Health Education of the American Association of Teachers' Colleges.

A series of thirteen radio transcriptions on physical fitness have been prepared for use by county medical societies or by other groups having the approval of the medical societies, in the promotion of physical fitness.

A television program on physical fitness was broadcast over station WKBK November 7, and a second is contemplated for late December.

The consultants have served as participants or have given talks at health conferences or other group meetings in Arizona, Illinois and Wisconsin and have other assignments of this type scheduled. Articles on health and physical fitness have been submitted to professional journals on health, physical education and recreation. Each of the consultants has been invited to prepare and is working on one chapter of the revision of "Health Education," published by the Joint Committee on Health Problems in Education. A considerable amount of correspondence addressed to the American Medical Association on health and physical education topics has been referred to and answered by the consultants. The consultants prepare each month a series of "Suggested Discussion Topics" for the classroom use of Hygeia, the Health Magazine, in secondary schools.

Pamphlets

Reacting to the justified criticisms of the Bureau's pamphlet publications contained in the Rich Report, an experimental project has been started in the Bureau to make evaluations of the pamphlets. Evaluation by a lay reader is more significant than by a doctor, since it is for lay readers that these pamphlets are intended. A recommendation has been made to the Board of Trustees that the pamphlet publications of the Bureau be improved, as recommended by the Rich Report, through the appointment of a pamphlet editor whose full time and sole duty it shall be to evaluate pamphlets, make layouts, procure art work and keep the reprint stock constantly fresh and vital.

Cooperative Relationships

The Director, Associate Director and Health Consultants represent the American Medical Association on a number of committees, of which the most active ones are:

Health Education Committee of the American Cancer Society.
National Congress of Parents and Teachers.
American Public Health Association (several committees).
National Committee for Boys and Girls Club Work (4-H Clubs).
U. S. Children's Bureau, Advisory Committee on Maternal and Child Health.
Cook County Health Survey.
National Committee on Standards for Interscholastic Athletics of the American Association for Health and Physical Education.
National Committee on Standards and Surveys on Health Education of the American Association of Teachers' Colleges.

Bureau of Legal Medicine and Legislation

Since the last report of the Bureau was submitted, the 79th Congress has adjourned sine die. All legislation then pending died. The 80th Congress will convene in regular session early in January and it can reasonably be anticipated that much of the legislation pertaining to the field of medicine which failed of enactment in the last Congress will be reintroduced.

As a result of the November elections there will be a change in the chairmanships of Congressional committees generally, and those committees to which proposals relating to medical care are customarily referred will therefore be under new leadership. It is reported that Senator Taft of Ohio will head the Senate Committee on Labor and Public Welfare, as the former Committee on Education and Labor will be designated under the reorganization act. To this committee will probably be referred any new version of the Wagner-Murray-Dingell bill unless provision is made in it for the imposition of taxes, in which case the new version will go to the Senate Committee on Finance. Senator Butler of Nebraska has been mentioned as the new chairman of that committee, succeeding Senator George.

In the new setup of the House of Representatives, Congressman Knutson of Minnesota has been mentioned as the new chairman of the House Committee on Ways and Means, Congressman Cole of New York as the new chairman of the Committee on Education and Labor, and Congressman Wolverton of New Jersey as the chairman of the Committee on Interstate and Foreign Commerce, the three House committees to which are normally referred major legislation proposing health programs.

With the change in the political flavor of the Congress, it would seem reasonable to anticipate even more sober deliberation in connection with any proposals that may be advanced to revolutionize medicine.

The Hospital Survey and Construction Act.—The President approved this far reaching law on August 13. While it authorizes an appropriation of $3,000,000 for state conducted surveys and $75,000,000 annually for five years for construction purposes, the 79th Congress actually appropriated only $2,350,000, earmarked for assistance to states in surveying and planning and for the administrative expenses of the Public Health Service in connection with the program.

Preliminary procedures have been developed to carry out the provisions of the new law. On a federal level there has been created in the Bureau of States, United States Public Health Service, a Division of Hospital Facilities which will be responsible for carrying out the functions which the Public Health Service is authorized under the law to perform. A Federal Hospital Council has been appointed. An Advisory Committee has been formed the members of which will act as consultants to the Council and to the Surgeon General of the Public Health Service.

On a state level, twenty-nine states have enacted legislation designating a single state agency to function in connection with the program. In the majority of these states the state health department was the agency designated.

Growing out of this federal law is a movement to promote the enactment of uniform state hospital licensure laws. The Hill-Burton law does not require a participating state to enact a hospital licensing law. It does require the enactment by July 1, 1948 of legislation providing that compliance with minimum state standards of maintenance and operation shall be required in the case of hospitals which receive federal aid under the law. It is apparently felt that this requirement can be more readily complied with by the enactment of a state licensing law in which provision is made for adequate standards and through the mechanics of which such standards can be successfully enforced. A draft of a proposed state hospital licensing law is being formulated under the sponsorship of the Council of State Governments. The Association was asked to participate in perfecting this draft and that invitation was accepted.

Enlarged Federal Cancer Program.—The 79th Congress made available to the Public Health Service an increased appropriation to assist states, counties, health districts and other political subdivisions of the states in establishing and maintaining adequate public health services. Of this increase the sum of $2,500,000 has been earmarked by the service for grants-in-aid to the states for a cancer program. This program, apparently, will be similar to the existing programs for venereal disease control and for tuberculosis control.

Maternal and Child Welfare.—While Congressional action was not completed on the Pepper maternal and child welfare bill, additional funds were made available by the 79th Congress for grants to states for maternal and child health services—the authorization being increased from $5,820,000 to $11,000,000, for services for crippled children—the authorization being increased from $3,870,000 to $7,500,000, and for child welfare services—the authorization being increased from $1,510,000 to $3,500,000.

National Mental Health Act.—On July 3 the President approved the National Mental Health Act to provide, through the United States Public Health Service, for research relating to psychiatric disorders and to aid in the development of more effective methods of prevention, diagnosis and treatment of such disorders. This law authorizes an annual appropriation of $10,000,000 to carry out its purposes through grants-in-aid and otherwise. It also authorizes an appropriation of $7,500,000 for the erection and equipment of hospital and laboratory buildings and facilities in or near the District of Columbia, to be known as the National Institute of Health. While these authorizations are included in the enacted law, actually no sums were appropriated by the 79th Congress, and the activation of the program must therefore await further Congressional action.

The President's Reorganization Plan No. 2.—This plan became effective July 16 after the Senate had rejected a House concurrent resolution proposing that the Congress disapprove it. By it the Children's Bureau, the Division of Vital Statistics and the activities of the United States Employees' Compensation Commission were transferred to the Federal Security Agency. There the Children's Bureau was placed in an operating branch designated as the Social Security Administration, headed by Arthur J. Altmeyer. The Division of Vital Statistics was placed in an operating branch designated as Public Health, headed by Surgeon General Thomas Parran of the United States Public Health Service. The activities of the former United States Employees' Compensation Commission which was abolished by the plan were assigned to an operating branch designated as Office of Special Services to be carried on by a newly created Bureau of Employees' Compensation and an Employees' Compensation Appeals Board, this operating branch to be headed by Mrs. Jewell W. Swofford, former chairman of the United States Employees' Compensation Commission.

Other Federal Laws Enacted.—During the closing days of its 79th session, the Congress completed action on the following additional measures of interest to medicine: (1) a bill to provide for health programs for government employees; (2) a bill to authorize the Veterans Administration to employ, without affecting their retired status, retired medical officers to act as superintendents and directors of medical services in veterans' hospitals; (3) a bill to make permanent the act of July 11, 1941 prohibiting prostitution in the vicinity of military and naval establishments; (4) the Crosser bill to amend the Railroad Retirement Acts and the Railroad Unemployment Insurance Act providing, among other things, cash sickness and maternity benefits for railroad employees and (5) a bill to provide assistance to the states in the establishment, maintenance, operation and expansion of school lunch programs.

State Legislation.—A summary survey of state laws of medical interest enacted during 1946 was completed by Mr. George E. Hall, a Bureau staff member, and published in The Journal of August 31. Similar surveys will be made in the future and published in The Journal so that trends in medical legislation may be followed and so that each state medical association will be advised as to the types of medical laws enacted in each other state.

Taxes.—Conferences have been held with the technical staff of the Joint Committee on Internal Revenue Taxation with respect to two specific matters: (1) the elimination of the requirement that the tax imposed on physicians by the Harrison Narcotic Act be paid by a certified check if it is paid by check and (2) a proposal that members of professional groups which under state law cannot engage in corporate practice be permitted to take advantage of the lower corporate tax rates. These matters will be given continued consideration.

Miscellaneous.—The Director of the Bureau participated in a Seminar in Legal Medicine, held under the auspices of the Department of Legal Medicine, Harvard Medical School, October 21 to 26, and has accepted such speaking engagements as the pressure of other demands has permitted. Much time has been devoted to the preparation of a history of the Bureau for incorporation in the history of the American Medical Association being written in connection with the centennial celebration to be held in 1947.

Bureau of Medical Economic Research

At its September 1946 meeting the Board of Trustees changed the name of this Bureau, established in 1931, from the Bureau of Medical Economics to the Bureau of Medical Economic Research. The Board also announced the appointment of Frank G. Dickinson, Ph.D., as the new Director of the Bureau, succeeding Dr. R. G. Leland. The Board also stated that the Bureau would be reactivated and expanded and that research would be stressed.

Dr. Dickinson resigned his position as associate professor of economics at the University of Illinois, where he had taught economics since graduation in 1921 except for the school year in 1922-1923, when he was instructor in economics at the Pennsylvania State College. He also received his A.M. degree at the end of that year. He received his Ph.D. degree at the University of Illinois in 1927. His principal fields of study and teaching were insurance and statistics. He had served as president of the American Association of University Teachers of Insurance during 1944 and 1945.

In reactivating the Bureau it has been necessary to add to the economic books, pamphlets and bulletins needed for research. Building a library requires a good deal of time. The new director has studied the previous publications of the Bureau and desires to report that he regards them as extremely fine studies. Every week a number of these are mailed in answer to the numerous and varied queries received. He has worked in close cooperation with the Council on Medical Service, attending its meetings and being a member of its Subcommittee on Cooperation with Insurance Industry in the Development of Prepayment Medical Care Plans and of its Committee on Rural Problems on Medical Care Insurance. The Director addressed the Association of Medical Care Plans at its first annual meeting in October and attended the meeting of its Commissioners in Omaha, November 14 and 15. It is hoped that this organization and the Director of the Bureau working with the Council on Medical Service will be able to develop comprehensive actuarial data on the operations and possible expansion of the different medical care plans in the various states. It will probably be necessary to employ an actuary in the Bureau to perform this function efficiently. An actuary is also needed to help with some of the research program planned by the Bureau.

The staff operating the I. B. M. equipment at Association headquarters was transferred to the Bureau in September, and the Director has devoted a considerable portion of his time to reorganizing this group. He found that the punch card inventory was not adequate and that some pieces of equipment were lacking. The Bureau has been called on to furnish information for several agencies, including the Coal Mines Administration in Washington. This information could not have been furnished without the I. B. M. equipment. It should be stressed that for the most part the Bureau in this capacity acts as a service agency for the Councils at American Medical Association Headquarters, especially the Council on Medical Service and the Council on Medical Education and Hospitals, and for local and state medical societies. Routine work connected therewith has taken a good deal of the Director's time.

So far as staff is concerned the only major change is the addition of Mrs. Laurie Wallach as research assistant. The Board of Trustees has authorized the Director to employ a young Ph.D. in Economics and Statistics and an M.D. with an interest in the field of medical economics. The Director has not yet found any one for either one of these positions.

Research work, almost completed by Dr. Leland, for the preparation of a life table for physicians which will be presented at Atlantic City by the Statistical Bureau of the Metropolitan Life Insurance Company has been continued. A later study of deaths among physicians during the war period has been started and it is hoped that a fairly comprehensive picture of mortality among physicians during the whole war period can be presented. This study will not be completed before 1948.

The Director has observed that the studies made here and elsewhere on the supply of medical service use county data: that is, the population of a county is divided by the number of physicians in that county, and this ratio is called the physician-population ratio. Economic data do not follow county boundary lines, although the county may be an excellent unit for organizing a professional society. A physician is not a county coroner, and his patients often reside outside the county. The accessibility of medical service has undergone many changes in the last generation, and a study of the supply of medical service must recognize the changes wrought by hard roads and other improvements in transportation. Hence the Bureau is attempting to develop medical service areas which cut across county boundary lines and circumscribe the area served by the physicians in the community. These physician-population ratios for medical service areas, when completed, will indicate the actual supply of medical service to the people in all sections of the United States. It is estimated that it will require at least two years to mark out the entire map of the United States into medical service areas as has been done for retail trading areas by several research organizations. A questionnaire has been sent to the county medical societies which asks the respective secretaries to draw on a state highway map a line around the area served by the physicians located in the medical center of the county. The Bureau hopes that the answers to this questionnaire by the county societies' secretaries will be helpful in preparing the medical service areas of each state.

The Bureau does not yet have the staff necessary to revise all the bulletins published heretofore by the Bureau, but letters have been received from the deans of most of the colleges of medicine regarding revisions of bulletins used in the teaching of courses in medical economics. It is hoped to complete these revisions during 1947.

The Director was asked by the General Manager to assist the Committee on National Emergency Medical Service in the preparation and mailing of a postwar questionnaire to 50,000 discharged medical officers and to code, tabulate and analyze the returned questionnaires. This work has taken most of the Bureau's time during November and December. The response to the questionnaire is remarkably good. Probably 20,000 or more questionnaires will be studied by the Bureau and the report filed with the Committee in April.

The only writing which the Director has found time to complete is the first article in the January issue of Hygeia. The article represents the general philosophy of the new Director of the Bureau regarding the "Quest for Health." It is the opportunity to study this quest for health which induced him to follow the suggestion of his family physician, Dr. Glen R. Ingram of Champaign, Ill., late in July that he consider the position of Director. Without the suggestion and urging of Dr. Ingram the Director would never have known of the magnificent opportunity which the position of Director of Medical Economic Research has opened up to him in the four months he has been at American Medical Association headquarters.

Bureau of Exhibits

The first postwar year saw the resumption of normal activities in the Bureau of Exhibits, with expansion of the work in several lines. The personnel of the Bureau which had consisted of three persons for many years, was increased to seven, and additional space on the fourth floor of the headquarters building was obtained.

The activities of the Bureau fall into several divisions, as follows: The Scientific Exhibit at the annual session of the Association; Association exhibits, which include medical exhibits for medical meetings and other scientific groups, as well as health exhibits for fairs and expositions; motion pictures. Each of these subjects is discussed separately in this report.

The Scientific Exhibit

The Scientific Exhibit at the San Francisco session was held in the Civic Auditorium, occupying several small halls and corridors on the first and second floors. The exhibits dramatized the advances made in medicine during the war years, constituting an intensified course in graduate medical instruction.

Section Exhibits.—Active cooperation was maintained with the seventeen sections of the Scientific Assembly, each of which appointed representatives to the Scientific Exhibit.

The section representatives rendered valuable assistance to the Committee on Scientific Exhibit in securing exhibits of exceptionally high caliber and in giving freely of their time and energy throughout the year.

United States Army.—It was the desire of Surg. Gen. Norman T. Kirk, United States Army, to portray at the San Francisco session advances that medicine had made during World War II. The Army built the exhibit entirely new for the meeting. Other activities of the Army included participation in the Special Exhibit on Physical Medicine and maintenance of two motion picture theaters in the Veterans Building. The Committee on Awards issued a citation of Merit to the United States Army for these contributions.

United States Navy.—The United States Navy presented a spectacular group of exhibits and, in addition, the Navy participated in the Special Exhibit on Physical Medicine and showed a group of motion pictures in the Veterans Building. The Committee on Awards issued a Citation of Merit to the United States Navy for these contributions.

Special Exhibit on Fractures.—This feature of the meeting was presented for the fifteenth time over a period of twenty years. Except for the first two years, Dr. Kellogg Speed, Chicago, has been chairman continuously, and it is due to his initiative and energy that interest has been maintained. Continuous demonstrations were conducted in six booths to audiences that strained the facilities of the area to accommodate them. A pamphlet was prepared for distribution.

Special Exhibit on Physical Medicine.—This exhibit was shown for the first time at the San Francisco session and was under the guidance of Dr. Frank H. Krusen, Rochester, Minn., chairman. The exhibit included physical therapy, occupational therapy and rehabilitation, occupying twelve booths. Motion pictures were shown continuously in a room adjoining the exhibits. A pamphlet was prepared for distribution by the Committee, while numerous pamphlets from other sources dealing with various phases of physical medicine were likewise distributed.

Motion Pictures.—Motion pictures in the Scientific Exhibit were not shown in exhibitors' booths because of the problem created in congestion of the aisles; therefore special theaters were arranged where the audiences could be seated in comfort. There were six motion picture theaters, one in the Civic Auditorium and the other five in the Veterans Building, three blocks distant. Authors were encouraged to comment on their films as they were shown or to make remarks immediately before or after the showing.

Committee on Awards.—The Committee on Awards consisted of Dr. O. P. J. Falk, St. Louis, chairman; Dr. H. J. Corper, Denver; Dr. Leo F. Rigler, Minneapolis; Dr. Curtice Rosser, Dallas, Texas, and Dr. J. Ross Veal, Washington, D. C. All the members worked conscientiously and diligently over a period of three days, including two night sessions, and returned a report that received much commendation.

Twenty-three awards were presented: six medals, six certificates of merit, eight honorable mentions, two citations of merit and one special commendation. In addition, the Committee extended itself beyond its regular sphere of activity and awarded a gold medal to the Director of the Scientific Exhibit. The complete report of the Committee on Awards, giving the names of the recipients of the awards and the titles of their exhibits, was published in The Journal, July 20, 1946, page 1008.

Recommendations.—The Committee on Awards recommended that a new medal be prepared for the Scientific Exhibit. It was felt that the present medal, which portrays the features of Dr. Frank Billings, is not symbolic of the spirit of the Scientific Exhibit. The Committee on Scientific Exhibit confirmed the recommendation of the new medal, and drawings are now being prepared.

Members of the Advisory Committee of the Scientific Exhibit recommended that a public Exposition be held in Atlantic City at the time of the annual session to promote public relations and health education. The Committee on Scientific Exhibit voted to investigate the feasibility of the matter.

Numerous suggestions have been received concerning methods by which a permanent record could be made of the exhibits shown at each annual session. The Committee on Scientific Exhibit voted that photographs be taken showing the detail of outstanding exhibits at the Atlantic City session. Copies will be sold to interested physicians.

At various times there have been requests for a pamphlet containing instructions for the preparation of exhibits. The Committee on Scientific Exhibit favored a pamphlet that would give basic information, and this will be prepared.

Comments and Remarks.—Numerous encomiums were received at San Francisco concerning the value of the Scientific Exhibit as a factor in graduate medical instruction. The credit, of course, goes to the exhibitors who gave so freely of their time and effort, with no thought of reward. The demonstration of an exhibit for a week at the annual session is almost a superhuman task, straining to the limit the energies of persons who undertake it. The Association is in deep gratitude to such persons.

Centennial Celebration.—Plans for the Centennial Celebration at Atlantic City in 1947 have been given much time and study. Close contact has been maintained with the Council on Scientific Assembly and with the sections, each of which has appointed a representative to the Scientific Exhibit. Arrangements have been made for four special exhibits, together with a considerable amount of historical material.

Association Exhibits

The Association Exhibits depict the work of the various Councils and Bureaus of the Association Headquarters on subjects in which those departments are interested. About forty exhibits are maintained for loan purposes, part of which go to medical meetings and other scientific groups, while the remainder are intended for fairs and expositions. During the year several old exhibits were discarded because they were no longer serviceable; others are in the process of repair and rebuilding. Lack of personnel in many of the departments has retarded the building of contemplated exhibits, while the difficulty of obtaining materials has still further delayed the program.

Difficulties in transportation and housing during the abnormal times following the war have interfered with participation in many meetings. A considerable number of requests for exhibits were canceled because of these reasons. During the first eleven months of the year, however, one hundred exhibits were sent to fifty-three meetings in twenty-five states and the District of Columbia. There were twenty-four medical and scientific meetings which used thirty-eight exhibits, each accompanied by a member from the headquarters staff. The Director of the Bureau of Exhibits attended many of the meetings personally.

Fairs and expositions which were canceled during the war opened again in 1946 to a considerable extent. Sixty-two exhibits were lent to twenty-nine local groups in many different states. The opportunity for contact with the public through health exhibits in promoting better public relations is excellent.

Museums

Health exhibits have been maintained in the Chicago Museum of Science and Industry and the Cleveland Health Museum A large group of exhibits was lent to the Dallas Health Museum, which opened in October, and cooperation has been extended to the proposed San Diego Health Museum, which is expected to open in the near future Other museums using the facilities of the American Medical Association include the Newark Museum at Newark, N J, and the Cayuga Museum of History and Art at Auburn, N Y

A question and answer service has been a feature at several of the museums, with the questions answered by mail from the Bureau of Health Education The questions have become so numerous, however, that the service has been temporarily curtailed

Committee on Medical Motion Pictures

In 1945 the Board of Trustees, at the instigation of the Committee on Scientific Exhibit, appointed a Committee on Medical Motion Pictures to make suggestions and report back to the Board At the San Francisco session the Trustees accepted the recommendations and appointed the following committee

Dr W L Benedict Mayo Clinic Rochester Minn Chairman 1947
Mr John G Bradley Director Motion Picture Section, Library of Congress Washington D C, 1947
Dr Dean F Smiley, Bureau of Health Education, A M A, 1948
Mr Ralph P Creer, Bureau of Exhibits A M A, Secretary 1948
Dr Morris Fishbein, Editor, The Journal, 1949
Mr Thomas S Jones, University of Illinois College of Medicine, Chicago, 1949

The Committee has acquired a projection room for reviewing films adjacent to its office on the fourth floor in the headquarters building Reviews of medical motion pictures have been published in The Journal and the source file of films has been expanded

The film library, formerly located in a professional studio, has been brought to the headquarters building, making possible a more efficient handling of films This library is still small, but additions will be made from time to time of films that are of a basic nature The demand for films from medical schools, medical societies, hospitals and other organizations continues to increase

A questionnaire has been sent to all medical schools in the United States and medical societies to obtain information concerning their facilities for showing films and concerning the subjects of films that would be most useful in medical schools and medical societies The response to date is gratifying

The Secretary of the Committee has kept in close touch with other groups interested in medical films and has attended many committee meetings of those groups

Miscellaneous Activities

Numerous conferences have been held on matters pertaining to graduate medical instruction and health education by visual means Visitors have come from all parts of the United States as well as from the Latin American countries and other parts of the world Members of the staff have collaborated with other agencies, serving on various boards and committees

The publications sponsored by the Bureau have continued to be popular Various mimeographed outlines prepared for distribution with exhibits have had a wide circulation

Bureau of Investigation

The number of inquiries recently received in the Bureau of Investigation about "patent' medicines and numerous other forms of quackery shows a substantial increase, and particularly the requests for such information which have come from college and high school students Much assistance is being given to students and others who are doing research work in quackery, and exhibit material is being supplied to teachers and health organizations

Considerable correspondence has been carried on recently with the Post Office Department, the Food and Drug Administration, the Federal Trade Commission, the National Better Business Bureau and its various branch offices, state licensing boards and other organizations regarding individuals and concerns which they and the Bureau are jointly investigating

The Bureau has obtained specimens of two new and widely promoted "hair growers," which the Chemical Laboratory is testing so that the facts on them may be published in The Journal Reports on other types of quackery also are being prepared for publication

In August the Acting Director of the Bureau took part in a television broadcast on "Medical Fakes"

The Bureau is preparing an exhibit for the Association's centennial celebration in 1947.

Bureau of Information

The Bureau of Information, through its service to the returning medical officer, is making a concentrated effort to guide physicians to locate in areas where their services are most needed Through the cooperation of the state medical societies, current listings are available for openings in general practice, specialties and associate positions throughout the country Physicians requesting information regarding a specific area in a state are supplied with summary sheets covering the medical and economic features of the area together with a listing of the communities in that state where there is definite need for a physician

Realizing that rural areas generally are not as well supplied with physicians as urban areas, the Bureau has been working closely with the Council on Medical Service and the Committee on Rural Medical Service of the American Medical Association in developing programs to arouse rural people to an appreciation of the benefits of modern medical science and to stimulate and coordinate the work of the various groups working for better rural medical service

In cooperation with the Bureau of Health Education and the Council on Medical Education and Hospitals, the Bureau of Information gave a television program on rural health problems and the extension to needy areas of more adequate medical care through a better distribution of physicians

The Bureau is working out a cooperative program with the Division of Hospital Facilities of the U S Public Health Service It is hoped that through a coordinated system of rural, city and town hospitals medical service in farm communities will be improved The Hill-Burton law, supporting the survey and construction of hospital, health and diagnostic centers throughout the nation, is one measure aimed at implementing this program in areas where the facilities are unavailable and cannot be supplied through local or state agencies In order to attract physicians into areas where needed, there must be reasonable assurance not only of economic security and satisfactory medical facilities but also of an opportunity to conduct the highest type of medical practice

The Bureau of Information is conducting a survey through local medical societies to determine the conditions and distribution of medical care in the rural areas of the country and the recent movements of physicians into rural areas In developing this survey the Bureau has sent a questionnaire to the state medical societies requesting specific information regarding the medical personnel, facilities and needs of every county in the United States The analysis and results of this survey will be published in The Journal of the American Medical Association

The Bureau is assisting the Committee on Rural Medical Service in arranging the second annual National Conference on Rural Health, to be held on Feb 7 and 8, 1947, in Chicago The meeting will give the farmer and the doctor an opportunity to exchange views regarding many questions which are of vital importance in developing a better health service in rural communities throughout the United States

Respectfully submitted,

R L Sensenich, Chairman
Ernest E Irons, Secretary
Dwight H Murray
William F Braasch
Louis H Bauer
E L Henderson.
John H. Fitzgibbon
James R Miller
C. W. Roberts.

Supplementary Report of Board of Trustees

Dr. R. L. Sensenich, Chairman, presented the following supplementary report, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary:

REPORT OF DR. IVY

The Department of State of the federal government several months ago requested the American Medical Association to suggest the name of an outstanding medical investigator to represent the United States on an interallied commission to study the medical experiments on human beings carried on by the Nazi government during the war. The Board of Trustees selected Dr. A. C. Ivy of Chicago as the representative. Dr. Ivy went to Europe and on his return submitted a report to the government and a copy to the Board of Trustees. The Board referred the report to the Judicial Council, and it is expected that that Council will report to the House of Delegates its conclusions and recommendations.

MATTERS REFERRED BY HOUSE OF DELEGATES

A number of resolutions and suggestions were referred to the Board of Trustees at the last annual session. In addition, several important items have arisen concerning which the House should be informed.

Resolutions on Inclusion in The Journal of Important Medical Activities in Puerto Rico: Dr. Charles H. Phifer, Illinois, introduced for Dr. Manuel de la Pila, Puerto Rico, under unanimous consent, the following resolutions, which were referred to the Board of Trustees:

WHEREAS, The Medical Association of Puerto Rico is composed of several hundred physicians, of whom the great majority are American citizens and graduates of class A medical schools of the continental United States; and

WHEREAS, This association is affiliated with the American Medical Association and its organization activities and standards correspond to those of the state medical associations of the continental United States; therefore be it

Resolved, That the news and notices of important medical activities in Puerto Rico be included in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION in the section of domestic information devoted to the publication of news from the different states and not in the section of news from foreign countries; and be it further

Resolved, That these news items and notices be sent to THE JOURNAL directly by or with the approval of the officers of the Medical Association of Puerto Rico.

The unintentional error has been corrected

Letter from Senator James E. Murray: The Board of Trustees presented a letter from Senator James E. Murray to the House of Delegates at its last annual session. This letter was referred to the Reference Committee on Legislation and Public Relations, which in turn referred it to the Board of Trustees for further investigation and decision as to a reply. The Board has given careful consideration to this communication and is of the opinion that no reply is necessary on account of the change in conditions since the receipt of the letter.

Resolutions on Establishment of Council on History of Medicine: The resolutions regarding the establishment of a Council on History of Medicine, which were referred by the House at the San Francisco session, on recommendation of the Reference Committee on Miscellaneous Business, to the Board of Trustees has been considered and has been discussed with the Council on Scientific Assembly. It was decided to devote one session in the Section on Miscellaneous Topics to the history of medicine at the 1947 annual session.

Resolutions on S. 2143: The Board of Trustees has already had one conference with Senator Taft relative to this bill, and another conference will be held after Jan. 1, 1947. At that conference certain other interested senators will also be consulted.

Review of Fidelity Insurance Schedule: The Board has reviewed the fidelity insurance carried against certain officers and employees, as recommended by the Reference Committee on Reports of Officers at the 1946 annual session, and feels that the present arrangements are satisfactory. For that reason the Board does not think it necessary to make any changes.

Resolutions on Rank of Surgeon General: A committee consisting of Dr. B. R. Kirklin, Chairman, Dr. Hugh P. Smith, Dr. Grover C. Penberthy, Dr. Elmer Hess and Dr. Charles J. Kickham was appointed by the Speaker of the House of Delegates in accordance with the terms of the resolutions adopted by the House at San Francisco on recommendation of the Reference Committee on Miscellaneous Business. The Board of Trustees has made funds available for expenses incurred in connection with this committee's activities.

Bureau of Medical Economic Research: The name of this Bureau has been changed from Bureau of Medical Economics to Bureau of Medical Economic Research. Dr. Frank G. Dickinson, formerly associate professor of economics at the University of Illinois, has been engaged as Director of the Bureau and as economist for the Association.

Financial Report: No report of financial affairs is included in this report. A detailed report is made to the House of Delegates at each annual session.

RESOLUTION ON HEALTH LEGISLATION BENEFICIAL TO THE PEOPLE

At the meeting of the House of Delegate of the American Medical Association in Chicago, Dec. 3, 1945, a resolution was introduced by Dr. Herbert H. Bauckus, delegate from New York, with the title "Health Legislation Beneficial to the People." This resolution proposed that the following principles for a health legislation program be adopted:

1. Establishment in the President's cabinet of a secretary of public health and medical welfare.

2. Encouragement of medical and other scientific research by government grants-in-aid.

3 Federal or state loans or guaranties of private loans for the expansion of hospital and educational facilities.

4. (*a*) Establishment of statewide voluntary nonprofit health care programs.

(*b*) Federal expansion of medical service within such programs.

(*c*) Cooperation with the Veterans Administration.

(*d*) Control of such medical services under state enabling acts.

(*e*) Cooperation and reciprocity between state medical and hospital care programs.

5. Public information and educational services on health.

6. The principle that the functions of government—federal and state—agencies should be to encourage and assist rather than compete with voluntary health insurance plans.

Further, it was resolved that every state medical society be invited to study, adopt and activate these principles on a state level and that they be submitted to the Council on Medical Service and Public Relations of the American Medical Association for immediate consideration as a pattern for a national health program.

These resolutions were referred to the Reference Committee on Legislation and Public Relations, which at that session presented an extensive analysis of the recommendations of President Truman regarding legislation, the constructive program adopted by the American Medical Association and several other resolutions dealing with medical care, and recommended that the House of Delegates of the American Medical Association instruct the Board of Trustees and the Council on Medical Service and Public Relations to proceed as promptly as possible with the development of a specific national health program, with emphasis on nationwide organization of locally administered prepayment medical care plans sponsored by medical societies.

At the 1946 session of the House of Delegates held in San Francisco, a resolution was introduced by Dr. John W. Green of California referring to a resolution which came from the Conference of Presidents and Other Officers of State Medical Associations, which in turn seems to have referred to the resolution introduced by Dr. Herbert H. Bauckus of New York. The resolution introduced by Dr. Green called attention to the fact that the House of Delegates in 1945 had approved a resolution on and adopted principles for a program of health legislation beneficial to the people and that it had referred the resolution to the Board of Trustees of the American Medical Association for further study and appropriate action and asserted furthermore that "no further action has apparently been taken to date." The resolution by Dr. John W. Green resolved that the House of Delegates of the American Medical Association be requested to make its instructions to the Board of Trustees for prompt action specific beyond possibility of misinterpretation. This resolution was referred to the Reference Committee on Legislation and Public Relations, which reported: "Your reference committee is of the opinion that the failure of the

Board of Trustees to take action on the resolution passed in December 1945 referred to was due primarily to the large amount of work presented to the Board of Trustees." It said, furthermore, "Following reorganization voted on Tuesday, we are of the opinion that this subject along with many others will be promptly considered by the proper authorities." At the same session of the House of Delegates Dr. Herbert H. Bauckus introduced a resolution in which he pointed out that the American Medical Association had adopted a ten point progressive program for medical care, that the American Medical Association had taken positive action in placing this program in effect by presenting it before Congress and by implementing its voluntary insurance program in various ways; that the general public is not as aware as it should be of the positive actions of the American Medical Association with reference to hospital construction, diagnostic facilities, infant and maternal welfare, voluntary insurance and health education, and resolved that the American Medical Association be requested to extend its publicity so that the general public will be more adequately informed on the progressive steps of the medical profession and furthermore that the House of Delegates of the American Medical Association request the various state associations to assist in bringing about this publicity. This resolution was also referred to the Reference Committee on Legislation and Public Relations, which reported its pleasure in the resolution and recommended its adoption.

It therefore appears that the delegate from California, Dr. John W. Green, was not aware of the actions already taken by the Association in regard to implementation of its ten point program, but that the delegate from New York, Dr. Bauckus, was familiar with the actions taken and that the House of Delegates in the same session endorsed by one action the extent to which the Board of Trustees had implemented the activities requested by Dr. Bauckus the previous year and in the same session excused the Board of Trustees for not implementing these activities because of pressure of work.

The Board of Trustees would call attention to the fact that many of the activities included in the original resolution by Dr. Bauckus, presented in December 1945, have been accomplished by new legislation or by actions of the American Medical Association in relation to pending legislation. The Board of Trustees therefore presents at this time a report on the various points covered by Dr. Bauckus in his resolution and approved December 1945:

1 The President has not established a secretary of public health and medical welfare in the cabinet. The President did coordinate many medical functions under the Federal Security Administrator, and it is reported that legislation is pending for the establishment in the cabinet of the President of a secretary of health and welfare.

2. The Kilgore-Magnuson bill to encourage medical and other scientific research by government grants-in-aid passed the Senate but failed to receive consideration in the House. Representatives of the American Medical Association appeared at the hearings on this legislation and presented suggestions for modifications of the original measure, most of which were incorporated in the final draft of the bill passed by the Senate.

3. The Hill-Burton bill passed both Senate and House and was signed by the President. Already the board to administer this bill has had sessions, and procedures are under way to make the measure effective. This bill meets the requirements expressed by Dr. Bauckus under point 3 of his original resolution.

4. The Council on Medical Service of the American Medical Association has established standards for voluntary medical care plans and has encouraged the development of Associated Medical Care Plans, Inc., for the coordination of those plans. Many of the states have passed enabling acts which have met with the standards established by the medical profession. Many of the states have already established relationships with the Veterans Administration, and the program for medical care of the veterans has been approved by the House of Delegates.

5. The American Medical Association has established a department of public relations. It has expanded the services of its Bureau of Health Education, it has extended its radio programs, and it is undertaking further promotion of HYGEIA as a means of implementing to the utmost public information and educational services.

6. Apparently the principle that the function of government should be to encourage and assist rather than to compete with reputable voluntary health insurance plans has gained strength from the change in the complexion of the Senate and the House of Representatives, but the Board of Trustees of the American Medical Association and the Council on Medical Service will be continuously watchful to see that this principle is not violated in the development of new legislation.

PUBLIC RELATIONS AND THE RICH REPORT

At the session of the American Medical Association held in San Francisco in July, the Board of Trustees presented to the House of Delegates a digest of a considerable portion of the Rich Report on the public relations of the American Medical Association, together with a report from the Board of Trustees as to certain actions already taken by the Board to make effective some of the recommendations of Mr. Rich and the recommendations of the Board relative to making effective other of these recommendations.

The Board of Trustees did not at that time present to the House of Delegates the second portion of the Rich Report, which dealt with the relations of the American Medical Association to the National Physicians Committee. The complete report is now made available to the House of Delegates.

Several reasons prompted the Board of Trustees to withhold presentation of that section of the Rich Report having to do with the relationships of the Association to the National Physicians Committee and the rest of the report which concerned the functions of some of the councils and bureaus in the headquarters office. In the first place, the major portion of the report was received from Mr. Rich just a few weeks before the date of the annual session of the American Medical Association, and the Board did not have full opportunity to consider it in detail before presenting it to the House of Delegates. In the second place, the proponents of compulsory sickness insurance who had attended the hearings on the Wagner-Murray-Dingell bill before the Committee on Education and Labor of the United States Senate had concentrated some of their attacks on the American Medical Association on its relationship to the National Physicians Committee and had endeavored to break down public confidence in both the American Medical Association and the National Physicians Committee by a series of untruthful and unwarranted statements concerning both organizations and their relationship to each other. The Board of Trustees felt that it would be unwise, in view of the fact that the hearings on the Wagner-Murray-Dingell bill were in progress, to bring this matter before the House of Delegates at the San Francisco session, with the possibility that the public press might by its presentation of the subject and its discussions injure greatly the efforts of the American Medical Association and of the National Physicians Committee as well in combating this vicious legislation. Since that time the hearings on the Wagner-Murray-Dingell bill have been brought to a close without any recommendation by the committee; there has been an election which considerably changes the membership of the Senate and the House of Representatives; there is evidence that the Committee on Education and Labor, which will have such legislation in charge in the next Congress, will be of a different composition and with a different chairman. The hazard which prevailed in June no longer prevails. The Board of Trustees now presents the complete Rich Report to the House of Delegates for its consideration.

These reports should be considered confidential, as they concern the Association's activities only. Many of the recommendations made in the Rich Report have already been put into effect; others are still under consideration.

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Report of the Secretary

Dr. George F. Lull, Secretary, presented the following report, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary:

To the Members of the House of Delegates of the American Medical Association:

The following interim report of the Secretary is respectfully submitted.

MEMBERSHIP

The number of members as of Dec. 1, 1946 was 129,145, an increase of 3,674 since Dec. 31, 1945.

FELLOWSHIP

On Dec. 31, 1945 there were 67,567 names on the Fellowship roster. As it was the wish of the House of Delegates to increase the number of Fellows, a campaign has been carried on during the past few months with this purpose in view. As of Dec. 1, 1946 the roster showed 71,553 Fellows, an increase of 3,986 in eleven months.

The difference between membership and Fellowship is not understood by a great many physicians. Members who are otherwise eligible and who subscribe for THE JOURNAL in many instances think that they are Fellows.

REAPPORTIONMENT OF DELEGATES

It will be recalled that a reapportionment of delegates was effected by the House of Delegates at the annual session in San Francisco. As the wording of section 3 of chapter I of the By-Laws of the Association was not changed subsequent to the decision to hold a supplemental session of the House, it would appear that the reapportionment is not effective until the next annual session in June 1947. The pertinent part of this section of the By-Laws reads "This apportionment shall take effect at the next succeeding annual session. . . ."

PHILIPPINE MEDICAL ASSOCIATION

It was taken for granted at the headquarters offices of the American Medical Association that when the Philippines became an independent nation on July 4, 1946 the Philippine Medical Association automatically ceased to be a constituent of this Association. Its name was removed from the list of constituent state and territorial medical associations, and the names of the members of the Philippine association were removed from the membership roster of the American Medical Association. This matter is reported to the House of Delegates in order that official action may be taken to signify that the Philippine Medical Association is no longer a constituent unit of the American Medical Association.

RESOLUTIONS TO BE PRESENTED TO HOUSE OF DELEGATES

Action taken by the House of Delegates at the San Francisco session provided that resolutions to be presented to the House shall be forwarded to the Secretary and published in THE JOURNAL as far as is possible thirty days prior to the meeting of the House. A number of such resolutions have been received and published. They also have been mimeographed.

Respectfully submitted,

GEORGE F. LULL, Secretary.

Report of Judicial Council

Dr. E. R. Cunniffe, Chairman, presented the following report, adding that a supplementary report would be presented later, and the Speaker announced that he would refer both when the supplementary report was presented:

To the Members of the House of Delegates of the American Medical Association:

The last meeting of the Judicial Council was held in July 1946 at San Francisco in conjunction with the annual meeting of the House of Delegates. At that time certain routine business was transacted. This consisted largely in recommendations of the applications for Associate Fellowship in the American Medical Association of foreign medical missionaries, the consideration of those candidates for Fellowship whose qualifications were questioned and the examination of all correspondence asking advice or opinions concerning the application of the principles of medical ethics to their particular situation. Hearings were also held on the appeal of the Northern Permanente Foundation against the decision of the Washington State Medical Association, which occupied most of the time of the three different sessions. Owing to the delay in the delivery of mail and the failure of the Washington State Medical Association to receive notice of the meeting, each side was allowed part of a meeting, and at a third session both sides appeared before the Council. It was agreed to wait for an answering brief from the Washington State Medical Association. When this brief was finally submitted, it was considered advisable to hold the matter over until the December meeting in order to allow sufficient time for a careful consideration of the material submitted. This appeal will come before the Council in December for further discussion and final disposition. There has been no Council meeting in the interim; hence this report will be brief and consist merely of a statement of the topics to be discussed at its next meeting.

The agenda for the forthcoming meeting will be much the same as usual, consisting of many questions concerning the interpretation of the Principles of Medical Ethics and the examination of numerous plans submitted for approval which involve the relations between ophthalmologists and optometrists. Many of these questions were answered by the Chairman offering his personal opinion, to be reviewed later by the Council. Most if not all of these proposed plans were unethical in that they violated chapter III, article I, section 5, of the Principles of Medical Ethics.

> It is unprofessional to receive remuneration from patents or copyrights on surgical instruments, appliances, medicines, foods, methods or procedures. It is equally unprofessional by ownership or control of patents or copyrights either to retard or to inhibit research or to restrict the benefit to patients or to the public to be derived therefrom. It is unprofessional to accept rebates on prescriptions or appliances, or perquisites from attendants who aid in the care of patients.

Some of these plans also involved the use of combined bills which has always been considered unprofessional and as tending to encourage the division of fees. All these plans will be reviewed by the Council. Its opinion will be sent to the individuals or societies seeking the information, and a more extended statement will be made in the 1947 report of the Judicial Council in regard to the ethics governing the relationship of ophthalmologists and optometrists. Many other inquiries were considered of such importance that no answer was given pending discussion by the Council at the next meeting.

Letters were received from roentgenologists and clinical pathologists asking for advice as to their rights in giving reports on interpretations of films or the results of clinical tests to a doctor who replaces another in charge of the case, even though requested to do so by the patient. Many hold the opinion that the consent of the first doctor who originally referred the case to him must be obtained before releasing these reports. The Council feels that at the request of the patient, preferably in writing, the reports should be immediately sent to the doctor then in charge of the patient. The diagnosis of the patient's ailment is paramount in arriving at the proper treatment to be rendered, and all information which aids the physician should be furnished so that proper treatment or advice can be given without delay. The question whether the contents of the report are to be given to the patient rests with the decision of the doctors who know all the circumstances involved in the situation.

In accordance with the resolution passed by the House of Delegates at the meeting in San Francisco, the members of the Council have under consideration the matter of revising the Principles of Medical Ethics. This proposition is being studied and will be discussed at this and future meetings so that recommendations may be reported at the next annual meeting to be held in Atlantic City in June 1947. As stated at the meeting in San Francisco, any suggestions from members of the House of Delegates will be gladly received and given serious consideration.

It might be advisable at this time, when voluntary prepayment health insurance plans are progressing and when some plans are being offered by others, not connected with the medical profession, in which the formation of medical groups is being encouraged, to discuss the ethics involved in this situation. The Council would therefore remind members of the Association that while solicitation of probable insurers or insurees is necessary to the success of medical insurance plans and is permitted, the solicitation of patients either by individuals or by medical groups is absolutely forbidden.

In the formation of medical groups it is important to bear in mind that the division of income given to members must be in proportion to the value of the services contributed by each individual participant. To divide the income of the group equally after deducting expenses would be in fact the division of fees, which is not only unethical but in violation of the laws of some localities. It might be suggested that each group be required to file its plan for division of income with the local county or state society and that means be devised for insuring strict adherence to the ethical principles as enumerated by the American Medical Association. It might be well to call attention to the section of the Principles of Medical Ethics which covers group practice and which reads as follows

> The ethical principles actuating and governing a group or clinic are exactly the same as those applicable to the individual As a group or clinic is composed of individual doctors, each of whom, whether employer, employee or partner, is subject to the principles of ethics herein elaborated, the uniting into a business or professional organization does not relieve them either individually or as a group from the obligation they assume when entering the profession.

Respectfully submitted,

Edward R. Cunniffe, Chairman.
Lloyd Noland.
John H. O'Shea.
Louis A. Buie.
Walter F. Donaldson.

Report of Council on Medical Education and Hospitals

Dr. H. G. Weiskotten of the Council presented the following report, which was referred to the Reference Committee on Medical Education:

To the Members of the House of Delegates of the American Medical Association:

The major concerns of the Council on Medical Education and Hospitals of the American Medical Association at the present time relate to the reconversion of medical education to a peacetime status. Serious problems are confronted at all levels of professional education in the field of medicine from premedical education to the residency training of physician veterans.

PREMEDICAL EDUCATION

No provision has been made for the deferment of premedical students, and it is unlikely that such provisions will be made. Colleges throughout the country are experiencing tremendously increasing enrolments. Undoubtedly many of these students who are primarily veterans are carrying out premedical studies, although it is not possible to estimate their numbers. Furthermore, it is difficult to estimate what the quality of their work will be, although preliminary observations seem to indicate that the veterans as a group are performing excellently in educational programs.

MEDICAL SCHOOLS

Bona fide medical students in attendance at a recognized medical school are eligible for deferment under the Selective Service System. When the figures for the present freshman class have been assembled they will probably reveal a moderate decrease in enrolments. There are more women than formerly, and there are from 50 to 60 per cent veterans in the freshman class.

All medical schools have abandoned compulsory acceleration, although a few schools permit acceleration on a voluntary basis for selected students. All schools have returned to the annual admission of students. Medical schools in many instances are encountering financial difficulties because budgets were increased during the war, partly on the basis of increased tuition income resulting from the accelerated program, admissions of students every nine months, increased wartime enrolments and the payment by the government of out of state tuition fees in state institutions. Decreased tuition income following the war now necessitates appreciable increases in other support of medical education.

RESIDENCIES FOR PHYSICIAN VETERANS

A major project of the Council since the outset of the war has been to assist hospitals to increase their educational facilities for returning medical officers at the residency level. Compared with 5,256 approved residency positions in 510 hospitals in the year 1941, there are now, as of Oct. 10, 1946, 9,028 residencies in 948 hospitals approved by the Council. This represents an expansion of about 70 per cent in the educational facilities in hospitals. While many returning medical officers have been accommodated by these expanding opportunities, a good many medical officers have been unable to secure residencies. This increase in hospital residencies has tremendously increased the inspection and consultation services and responsibilities of the Council and its professional staff.

Ten of the American boards accept preceptor training in fulfilment of the educational requirements for the Board examinations. This preceptor training supplements residency training in an important manner.

The agreement of the Council with the Veterans Administration concerning the applicability of the educational provisions of the G. I. Bill of Rights to residency training has operated reasonably well except for delays in payments especially to institutions and the small sums paid most hospitals. In essence, this agreement recognizes approved hospital residencies as educational in nature, so that veterans are eligible for subsistence benefits even though the hospital may pay a modest stipend to the resident and even though the resident is provided with maintenance within the hospital. The agreement also provides for a small payment to the hospital—$15 a month per veteran—which may be increased if the hospital successfully negotiates a contract with the Veterans Administration setting forth the costs of maintaining the residency program.

RESIDENCIES IN THE FEDERAL SERVICES

The Council is collaborating with the Army, Navy and Veterans Administration in the establishment of acceptable residencies in selected federal hospitals with a view to improving medical care in those institutions and attracting a higher caliber of medical officer to service in one of these federal divisions.

The program with the Veterans Administration has gone somewhat further than in the Army and Navy. The program of close collaboration of veterans' hospitals with medical schools is proceeding rather favorably and the Council is assisting in furthering this collaboration. An important feature of the forty-third Annual Congress on Medical Education and Licensure, to be held in Chicago Feb. 10 and 11, 1947, will be a round table discussion on residency programs in veterans' hospitals in which medical school deans and representatives of the Veterans Administration will participate.

POSTGRADUATE COURSES

The Council is continuing to publish a semiannual listing of postgraduate courses. These listings have increased in size and diversity of subject matter presented and are contributing materially to meeting the needs of returning medical officers. It is particularly important to note that an increasing number of these courses is being offered by medical schools.

FOREIGN CREDENTIALS OF PHYSICIANS

The serious problem is now being faced of evaluating medical school credentials of physicians graduating from foreign medical schools. It is a policy of the Council to consider for inclusion on its list of approved medical schools only institutions which could be inspected by the Council.

In the past such inspections have not been possible outside the United States and Canada. Recognizing the desirability of some agreement regarding the evaluation of foreign credentials, the Council has organized a committee to study and report on this problem. On this committee there is representation from the Council on Medical Education and Hospitals of the American Medical Association, the Association of American Medical Colleges, the Federation of State Medical Boards of the United States, the Advisory Board for Medical Specialties, the National Board of Medical Examiners and the United States Office of Education. This committee is not yet ready to report its recommendations.

NATIONAL SOCIETY FOR MEDICAL RESEARCH

The National Society for Medical Research was organized because of widespread recognition of the need for a national organization to educate the public to a knowledge of the value in medicine of humane animal experimentation. This society has a permanent secretariat in Chicago and is effectively commencing operations to assist various local groups in carrying out campaigns to inform the public of the vast harm which would be done should various antivivisection proposals be adopted. There has been gratifying financial support for this organization from the medical schools. The Council recognizes the extreme importance of this work in the fields of medical education and research and wishes to urge the full support of the American Medical Association in the efforts of the National Society for Medical Research.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

The forty-third Annual Congress on Medical Education and Licensure, to be held in Chicago Feb. 10 and 11, 1947, will be devoted largely to such problems of reconversion in medical education as are discussed in this report to the House of Delegates.

STATUS OF EXISTING MEDICAL SCHOOLS

The approval status of the existing medical schools in this country is unchanged since the last report of the Council to the House of Delegates. Remaining on probation are the Hahnemann Medical College and Hospital of Philadelphia and the two schools of basic medical sciences in North Dakota and South Dakota.

Since July the following medical schools have been visited by the Council's staff for inspection or other purposes:

Medical College of Alabama, Birmingham.
University of South Dakota School of Medical Sciences, Vermillion, S. D.
University of Missouri School of Medicine and the Hospitals of Kansas City, Mo.
University of Vancouver, British Columbia.
University of Washington School of Medicine, Seattle.
St. Louis University School of Medicine, St. Louis.
University of Colorado School of Medicine, Denver.

NEW MEDICAL SCHOOLS

New medical schools are under discussion or in the process of organization in several areas throughout the United States.

The Medical College of Alabama has completed its expansion program from the former school of basic medical sciences to a four year institution and has graduated its first class. This institution has been inspected by the Council staff.

Other two year schools contemplating becoming full medical schools are the University of Mississipi, University of Missouri, University of North Carolina, University of North Dakota, University of South Dakota and West Virginia University.

Entirely new medical schools are being contemplated in Maine, California, Connecticut, New York and Florida. In these developments the Council is lending its guidance lest a low quality of medical education be established in such new institutions as may come to full fruition.

HOSPITAL SURVEY AND CONSTRUCTION ACT

With the passage of the Hill-Burton bill (S. 191) there has been formulated the required Federal Hospital Council as well as an Advisory Board to this Council. The Council on Medical Education and Hospitals is represented on this Advisory Board and will exert its influence in trying to maintain adequate standards of hospital care as well as a wise distribution of hospitals under this law.

REVISION OF ESSENTIALS

The Council presents for the consideration of the House of Delegates revisions of certain of the Council's Essentials. Both the "Essentials for Approved Examining Boards in Specialties" and the "Essentials for Approved Residencies and Fellowships" require clarification, expansion and revision in the light of the tremendous emphasis on hospital residencies and specialty certification at the present time. The Council recommends that the revised Essentials be adopted by the House of Delegates.

RESIGNATION OF THE SECRETARY

Dr. Victor Johnson has resigned as Secretary of the Council, effective April 1, 1947.

APPRECIATION

The Council on Medical Education and Hospitals of the American Medical Association is able to conduct its important work at a high level only because of the continued and enthusiastic support of the House of Delegates and officers of the American Medical Association. The Council deeply appreciates this support and desires in addition to extend its thanks to the many institutions throughout the country for supplying the Council with information and collaborating with the Council in its extensive inspection program.

Respectfully submitted,

H. G. Weiskotten, Chairman.
Harvey B. Stone.
Russell L. Haden.
J. H. Musser.
Reginald Fitz.
Charles Gordon Heyd.
Victor Johnson, Secretary.

Supplementary Report of Council on Medical Education and Hospitals

Dr. H. G. Weiskotten of the Council then presented the following supplementary report, which was referred to the Reference Committee on Medical Education:

The Council wishes to defer consideration by the House of Delegates of changes now being made in the "Essentials of Approved Residencies and Fellowships" until a later meeting of this House.

The Council recommends that there be a change in the title "Essentials of an Acceptable School for Clinical Laboratory Technicians" to read "Essentials of an Acceptable School for Medical Technologists." In conformity with this change in title of the document, the Council recommends changes throughout the text whenever the term "clinical laboratory technician" occurs to read "medical technologist."

As part of this supplementary report, the Council also includes the text of the proposed revision of the "Essentials for Approved Examining Boards in Specialties."

RECOMMENDED REVISION OF ESSENTIALS FOR APPROVED EXAMINING BOARDS IN SPECIALTIES

I. Introduction

The American Board of Ophthalmology, the first of the examining boards in the specialties, was incorporated in 1917. Four additional boards were organized by 1933 (Otolaryngology in 1924, Obstetrics and Gynecology in 1930, Dermatology and Syphilology in 1932 and Pediatrics in 1933).

In 1933 the House of Delegates of the American Medical Association adopted a resolution authorizing the Council on Medical Education and Hospitals "to express its approval of such special examining boards as conform to the standards of administration formulated by the Council" and providing for the employment of "the machinery of the American Medical Association, including the publication of its Directory, in furthering the work of such examining boards as may be accredited by the Council."

In 1933-1934 the Advisory Board for Medical Specialties was organized with representation from each of the approved boards to "act in an advisory capacity to such organizations as may seek its advice concerning the coordination of the education and certification of medical specialists." The Council on Medical Education and Hospitals and the Advisory Board for Medical Specialties work in close collaboration through joint meetings and frequent conferences.

II. Purpose and Functions of a Specialty Board

An American board in a specialty is organized (*a*) to assist in improving the quality of graduate education in that field, (*b*) to establish minimum educational and training standards in the specialty, in conformity with the general provisions of these "Essentials," (*c*) to determine whether candidates have received adequate preparation as defined by the board, (*d*) to provide comprehensive examinations to determine the ability and fitness of such candidates and (*c*) to certify to the competence of those physicians who have satisfied the requirements of the board, as a protection to the public and the profession.

III. Organization

An examining board in a specialty to be approved by the Council on Medical Education and Hospitals should represent a recognized and distinct specialty or well defined field of medicine. It should be composed of representatives of the national organizations in the field as well as the related section of the American Medical Association. The board should be incorporated.

IV. Definition of Special Fields

The following branches of medicine at present are recognized as suitable fields for the certification of specialists. In each case the symbol employed in designating specialists in the Directory of the American Medical Association is given (A.B.I., and so on). Certain of the boards also certify candidates in subspecialties, as indicated by footnotes:

	Name of Board	Year of Incorporation
A.B. 1.	American Board of Pediatrics[1]	1933
A.B. 2.	American Board of Psychiatry and Neurology	1934
A.B. 3.	American Board of Orthopaedic Surgery	1934
A.B. 4.	American Board of Dermatology and Syphilology	1932
A.B. 5.	American Board of Radiology	1934
A.B. 6.	American Board of Urology	1935
A.B. 7.	American Board of Obstetrics and Gynecology	1930
A.B. 8.	American Board of Internal Medicine[2]	1936
A.B. 9.	American Board of Pathology	1936
A.B. 10.	American Board of Ophthalmology	1917
A.B. 11.	American Board of Otolaryngology	1924
A.B. 12.	American Board of Surgery[3]	1937
A.B. 13.	American Board of Anesthesiology	1938
A.B. 14.	American Board of Plastic Surgery	1937
A.B. 15.	American Board of Neurological Surgery	1940

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1. Also certifies specialists in allergy.
2. Also certifies specialists in allergy, cardiovascular disease, gastroenterology and tuberculosis.
3. Also certifies specialists in proctology.

V. Qualifications of Candidates

Each applicant for admission to the examination should be required to present evidence that he has met the following standards:

A. General Qualifications:

1. Satisfactory moral and ethical standing in the profession.

2. A license to practice medicine in a state, territory or possession of the United States.

B. Professional Education:

1. Graduation from a medical school of the United States or Canada approved by the Council on Medical Education and Hospitals of the American Medical Association. Candidates who submit credentials from institutions outside the United States and Canada should be required to pass the examination of the National Board of Medical Examiners.

2. Completion of an internship of not less than one year in a hospital approved by the same Council.

C. Special Training:

1. A period of special training after the internship, preferably three years, in clinics, dispensaries, hospitals or laboratories approved by the Council on Medical Education and Hospitals and the respective specialty board as competent to provide a satisfactory training in the special field of study. In individual instances specialty boards may grant training credit for work done in preceptorships. Candidates whose special training has been received outside United States should submit credentials satisfactory to the examining boards. Credits for military service may be granted by individual boards.

2. This specialized training preparation shall likewise:

(*a*) include satisfactory graduate training in the basic sciences which is considered by the American board necessary to the proper understanding of the specialty in question:

(*b*) be supplemented by an additional period of not less than two years of training and/or practice in the special field concerned.

(*c*) be evaluated by examinations which should include the basic medical sciences as well as the clinical, laboratory and public health aspects of the specialty.

VI. Establishment of an Acceptable Specialty Board

In considering the organization of an American board in a special field of medicine seeking recognition by the Council on Medical Education and Hospitals of the American Medical Association the procedure is as follows:

A. The application should be presented to the Advisory Board for Medical Specialties. This board in turn shall inform the Council on Medical Education and Hospitals fully regarding the application.

B. The application after being received from the Advisory Board for Medical Specialties will be carefully deliberated by the Council, due consideration being given to the need for a new board, the relationship of that board to the existing boards and the adequacy of the proposed educational programs and available facilities for the preparation of physicians for the certification examinations.

C. The Council will approve new boards only after recommendation by the Advisory Board for Medical Specialties.

D. Official recognition of the board is indicated by listing the specialty in the "Essentials for Approved Examining Boards in Specialties" and indicating certified specialists with an appropriate symbol in the Directory of the American Medical Association.

VII. Residencies in the Specialties

Procedures for considering an institution for approval of a residency for training in a recognized specialty are as follows:

A. The institution should make application to the Council on Medical Education and Hospitals of the American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

B. The Council conducts a survey of the institution to determine whether the residency complies with the Council's "Essentials of Approved Residencies and Fellowships."

C. The Council prepares a report on its findings and conclusions which is submitted to the specialty board concerned for its recommendations.

D. Approval may then be granted by the Council.

VIII. Withdrawal of Approval

On conference with the respective specialty boards or with the Advisory Board for Medical Specialties, the recognition extended by the Council on Medical Education and Hospitals of the American Medical Association to holders of certificates from special examining boards, or that granted to a specialty board, may be withdrawn. Approval may likewise be withdrawn from institutions offering residencies when resurveys by the Council reveal a failure of the institution to maintain a satisfactory educational program.

Report of Council on Scientific Assembly

Dr. E. L. Bortz, Chairman, presented the following report as well as proposed tentative programs of the General Scientific Meetings and sections the official copy of which will be published in the program for the Atlantic City Session, which was referred to the Reference Committee on Medical Education:

To the Members of the House of Delegates of the American Medical Association:

The Council on Scientific Assembly met with the secretaries of the various sections on Sept. 21, 1946 in the headquarters of the American Medical Association. Plans were discussed for the Centennial Celebration meeting in Atlantic City in June 1947.

The General Scientific Meetings will be under the direct supervision of the Council on Scientific Assembly. These meetings will be held Monday afternoon, Tuesday morning and Tuesday afternoon, June 9 and 10. Each meeting will have as its presiding officer a member of the Council. Nine papers will be presented by well known authorities in American medicine on topics of importance to the membership of the Association. The Committee on Centennial Celebration has authorized the Council to invite a distinguished guest to appear on each of the three programs. Each of these men will be assigned a prominent position on the schedule just preceding intermission during the three scientific sessions.

Three panels will be introduced on the program of the General Scientific Meetings. The panels will be on the topics Modern Management of Heart Disease, Emergency Surgery and Antibiotic Therapy. Each of these will be presided over by a distinguished American authority, and assisting him will be experts who will discuss particular phases of the subject. Following these presentations there will be a question and answer period, and finally each panel will conclude with a general summary by the leader of the panel.

The sections of the Scientific Assembly will offer discussions of the first importance in their particular fields by qualified speakers. A historical summary is to be presented by a prominent leader in each field. Each section will have the privilege of inviting a distinguished foreign guest to appear on the program.

The Section on Miscellaneous Topics is divided into three sessions for the Centennial Celebration. One session has been allotted to Allergy, another to the History of Medicine and a third to Physical Medicine. The names of distinguished American leaders have been chosen by the Council to act as chairmen and secretaries, who will be responsible for the details of each of these important sessions.

The Council, with the cooperation of the section secretaries, has drawn up a series of suggestions for each of the speakers appearing on the program, with due emphasis on the type of presentation which is most acceptable to the audience, the manner of showing slides, illustrations, graphs and so forth.

The Council on Scientific Assembly has taken under advisement recommendations for the formation of certain new sections.

Respectfully submitted,

EDWARD L. BORTZ, Chairman.
CLYDE L. CUMMER.
CHARLES H. PHIFER.
HENRY R. VIETS.
L. W. LARSON.
OLIN WEST.
MORRIS FISHBEIN. } Ex officio.
GEORGE F. LULL.

Report of Council on Medical Service

Dr. E. J. McCormick, Chairman, presented the following report, which was referred to the Reference Committee on Medical Service:

To the Members of the House of Delegates of the American Medical Association:

PREPAYMENT PLANS

The voluntary prepayment medical care program has progressed rapidly since the House of Delegates met in Chicago in December 1945. Seventeen plans in fifteen states have been started in 1946. This brings the total number of plans to over eighty spread out over thirty-three states, Hawaii and Puerto Rico. In addition thirteen states and the District of Columbia are in various stages of plan development, leaving only two states with no program in progress. The rapid growth in the number of plans will necessarily give impetus to the growth in enrolment. Already enrolment in many of the plans less than a year old exceeds 50,000, and several plans are approaching the 100,000 mark. Last year at this time only two plans had over 250,000 enrolment; at present five of the plans are in this group, with one nearing the million mark and three approaching 500,000. It seems possible that the 5,000,000 goal will be reached shortly after the first of the year.

The Council will continue to concentrate on the overall national picture as it pertains to voluntary prepayment medical care plans. Staff members have met with state committees and assisted in laying the groundwork for prepayment programs. Data and information on plan activities continue to be gathered and reported through the News Letter and individual correspondence. A revision of the brochure on Prepayment Plans is in progress and should be ready for distribution in February.

The technical problem of plan administration will be handled by Associated Medical Care Plans, an organization of the Plans themselves with headquarters in the Council office. Associated Medical Care Plans will work with the Council and will assist the Plans on such problems as reciprocity, sales training programs, standard policies for recording data and other administrative details.

The Seal of Acceptance, as of Nov. 1, 1946, has been granted to twenty-seven medical society approved plans. Using the Seal of Acceptance as a symbol for public identification, the Council hopes to be able to put forth special effort in publicizing prepayment, both to the public and the medical profession.

NATIONAL HEALTH CONGRESS

In the Council's last report to the House of Delegates the suggestion was made that, before setting up a National Health Congress it might be best to survey the status of existing local health groups. With this in mind, and with the approval of the House, the Council is proceeding with the collection of information on state and local health councils. Of the forty-two states answering the Council's questionnaire, nineteen have a statewide health council of some type, twenty have no such organization and three are in the process of forming such a group. A meeting of representatives from existing health councils is planned for early in 1947. From this meeting the Council hopes either to draw up a model program or to set forth specific recommendations for the expansion of the health council idea.

SPEAKERS' BUREAU

A questionnaire concerning the advisability of having a "briefing" course at American Medical Association headquarters has been sent to all the state medical societies. The response has been encouraging. Thirty states have answered the Council's letter. Fourteen already have a speakers' bureau. Twenty-two approve the "briefing" idea, six are not interested and two said they didn't know.

The purpose of the course will be to provide a select group of doctors with sufficient background, information and material so that they may return to their home state and organize county society Speakers' Bureaus. The letters received indicated an interest in factual data, in a supply of material to be distributed to doctors "back home" and in competent instruction in the art of public presentation. In order to keep the group small enough to handle, it may be necessary to have two courses; that is, an east and a west group.

UNITED MINE WORKERS HEALTH FUND

As instructed by the House of Delegates at San Francisco, the Council on Medical Service has followed closely the developments concerning the United Mine Workers Health Fund and the Welfare and Retirement Fund. The principal activity so far has been the survey of conditions existing throughout the bituminous coal mine areas. This survey was made by Navy field teams under the direction of Rear Admiral Joel T. Boone. Representatives of the Council on Medical Service and the Council on Industrial Health accompanied one of the survey teams on a visit to the mine areas to observe at first hand the methods used in making the survey. Representatives have also attended conferences on the survey held by Admiral Boone. The survey recommendations have not been released and any comments must necessarily be postponed until such release is made. A joint report by the Council on Medical Service and the Council on Industrial Health appeared in the Oct. 26, 1946 issue of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. A supplementary report undoubtedly will be made to the House of Delegates.

TAFT-SMITH-BALL BILL

Early this fall the Council asked each state medical society to submit its suggestions and opinions on the Taft-Smith-Ball bill. At that time it was anticipated that a meeting might be held soon with Senator Taft to discuss the bill. The meeting will be scheduled for some time after the first of the year. The Council is under the impression that Mr. Taft intends to submit this bill to the Senate at the earliest possible moment and therefore wishes to be in a position to relate to him the opinions of the various state medical societies.

HILL-BURTON BILL

At the request of the Board of Trustees, the Council has contacted the state medical societies in an effort to impress on them the importance of preparing a plan of cooperation for putting into effect the provisions of the Hill-Burton bill. When the states have completed the hospital survey and the material has been placed in the hands of the American Hospital Association, the results of these surveys will be utilized in developing a statewide hospital construction plan. What part the medical profession plays will depend on its preparedness and willingness to cooperate with other groups in utilizing funds provided for in the bill. As a service to the states the Council is preparing a statement of principles as a guide to such cooperation and a set of minimal standards for diagnostic clinic facilities. Because of the extreme importance of this program, the Council presents the following recommendations to the House of Delegates:

The importance of the Hill-Burton Hospital Construction bill in the overall program of medical and hospital care should be recognized by all medical societies, state and county.

The medical profession, through its state and county medical societies, should be encouraged to participate actively in plans or programs formulated under the bill.

This participation should include an early review by the state medical societies of the membership making up the advisory council to the state agency charged with the responsibility of carrying out the provisions of the bill to determine the adequacy of medical representation.

This participation should include a positive effort to see that local autonomy is maintained; that facilities are placed only where a specific need for them is shown; that any diagnostic clinic facilities be erected only with the approval of the county medical society in whose area they are placed.

PUBLIC ASSISTANCE PROGRAMS

A number of state medical societies have inquired as to ways and means of organizing medical care programs for recipients of public assistance funds. Little attention has been given to this problem during the past six years, yet it continues to grow in importance. In anticipation of a future downward economic trend, the Council is gathering information and data on such programs. Special attention is being given to the possibility of utilizing existing prepayment plans.

REGIONAL CONFERENCES

The Council is continuing its program of regional conferences but is making every effort to coordinate these conferences with existing meetings. In line with this policy the regional conference in St. Paul was held in cooperation with the North Central Medical Conference on November 10. The conference was attended by about eighty persons and was probably one of the most interesting and informative that the Council has had up to date. The Council has also cooperated with the Middle Atlantic States Public Relations Conference at a meeting held in Philadelphia on November 21. The Middle Atlantic group is a permanent organization resulting from the original Council conferences held in that area and follows somewhat the pattern of the New England States group. Other conferences are planned for other sections of the country.

STUDIES AND PUBLICATIONS

Compulsory Sickness Insurance: The Council is continuing its work on the gathering of information on this subject and, in addition to the brochure entitled "Voluntary Health Insurance vs. Compulsory Sickness Insurance," has printed a set of cards to be used by doctors in giving talks on the subject.

Cooperatives: The Council is gathering information and data relative to the medical cooperative movement throughout the country. This is partly an informative study and partly for the purpose of providing information which can be given to doctors interested in this particular type of medical practice.

Contract and Group Practice: Because of the many requests for information concerning this particular type of medical practice, the Council is planning to bring the original material prepared by Dr. R. G. Leland up to date.

News Letters: Because of the growing amount of material to be used in the News Letters, the Council found it necessary to have them printed rather than mimeographed. This provides for from two to three times as many words and makes a more easily read and attractive publication.

Miscellaneous: Each week many questions arise concerning problems of medical service on which there are insufficient information and data. As a result the Council staff is making a number of studies and compilations which will eventually be published in printed form.

FILM ON PREPAYMENT

The Council has been investigating the possibility of having a film produced on prepayment medical care plans. This film would be of such a nature as to be available to medical societies and various prepayment plans in the carrying on of educational campaigns. Suggestions as to name, length, size of film, continuity and so on have been set forth in a special report to be used in conference with a film producing agency. Tentative cost for such a film seems to be somewhere in the neighborhood of $30,000. The project is being arranged with the Bureau of Exhibits.

CONTACTS

The Council has continued its contacts with many special groups, such as the American Dental Association, National Tuberculosis Association, American Cancer Society and American College of Radiology.

PRIVATE INSURANCE CONFERENCES

During the past few months, the Council has had a series of conferences with representatives from private insurance carrier associations. These meetings were called to discuss problems of mutual interest and resulted in better understanding on each side. In a joint effort to go into more detailed studies of some of the problems, two subcommittees were appointed, one on cooperation and the other on rural enrolment. These subcommittees have recently met in New York and plan further conferences next year.

One of the problems discussed had to do with a simplification of insurance forms. Some time ago the Health and Accident Underwriters Conference and other interested insurance organizations prepared a simplified claim blank to be used by insurance companies in securing medical information from physicians with regard to disability claims. These simplified blanks were submitted for American Medical Association approval and were approved by the Board of Trustees in November 1944. Permission was then sought to imprint this approval on the claim blanks. The Board of Trustees was of the opinion it would be more desirable to have such forms approved by one of the Councils rather than by the American Medical Association and suggested the Council on Medical Service. At the New York meeting of representatives of the American Medical Association and insurance associations the insurance representatives expressed the desire that the Council on Medical Service review, approve and permit the imprint of Council approval on acceptable insurance claim blanks requiring medical data. The Council hesitates to proceed further with this project without specific approval by the House of Delegates.

WASHINGTON OFFICE

The Washington office has new, larger and more attractive quarters at 1302 18th Street N. W. and is now in the process of acquiring proper furnishings. The work should be complete by the time Congress convenes.

The office is engaged at present in reconstructing its filing system so that information and data may be made more easily available to Congressmen and interested organizations. The many and great variety of requests make it necessary to maintain a more voluminous file than was originally anticipated.

The final volumes of the minutes of the hearings on the National Health bill have been printed and are being distributed.

The Director has participated in numerous discussions and round tables on this subject and has assisted the Chicago office in distributing material to students, Congressmen and interested groups.

Every effort is made to be of assistance to individuals and organizations. Expansion of services and personnel is planned to facilitate giving this assistance.

HEADQUARTERS OFFICE

The Council has been provided with almost double its former amount of office space. The personnel has been increased in the past few months from four to eight persons. Mr. Howard Brower, formerly of the state department of insurance of the state of Michigan, and Mr. L. S. Kleinschmidt, formerly of the U. S. Department of Agriculture, Farm Security Administration, are two new assistants. Mr. Brower is working primarily on insurance programs and Mr. Kleinschmidt on community and rural enrolment in prepayment plans. This, in addition to the increase in office staff, gives the Council a reasonable opportunity to carry on the activities assigned to it. The volume of office work continues to increase as the state and county medical societies, the individual physicians and the public discover the services the Council can and will render to them. With this increase has also come a demand for personal appearances on meeting programs and personal attendance at committee conferences. The Council members, the Council secretary and other staff members are making every effort to fulfil this demand.

The Council is prepared at the present time to present to the members of the House of Delegates and to those who are interested a card system for the purpose of aiding and helping those who are speaking on the subject of compulsory health insurance and prepayment medicine. These are just off the press and are available.

The Council would likewise like to call to your attention the booklet called "Check and Double Check" on sickness insurance which has been published under the Public Relations Bureau of the Medical Society of the State of New York. Dr. Dwight *Anderson told me this morning that this booklet is available* for all of you in the lobby. The Council would be well pleased if all members of the House would avail themselves of the opportunity to procure all of these booklets in connection with the Speakers' Bureau venture.

Respectfully submitted,

E. J. McCormick, Chairman.
Raymond L. Zech.
James R. McVay.
Alfred W. Adson.
Walter B. Martin.
Thomas A. McGoldrick.
Roger I. Lee.
H. H. Shoulders.
Louis H. Bauer.
George F. Lull.
Thomas A. Hendricks, Secretary.

Supplementary Report of the Council on Medical Service

Dr. McCormick presented the following supplementary report of the Council on Medical Service, which was referred to the Reference Committee on Medical Service:

The Council on Medical Service at its meeting held Saturday evening, December 7, and Sunday, December 8, arrived at a number of decisions which it felt necessary to add to the original report to the House of Delegates. They are as follows:

NATIONAL HEALTH CONGRESS

With further reference to the National Health Congress mentioned in the semiannual report, the Council has further recommendations to make.

The formation of state or local health councils to meet local needs and enlist the cooperation of other interested bodies has merit. The Council will continue to work on the program and will call a meeting of local health councils and others interested to discuss the value of such councils and draw up a model outline for the formation and scope of such councils.

The Council, however, after much study feels that to set up a National Health Congress as a permanent body is not advisable. Such a body would be bound to duplicate the efforts of, and to a certain extent usurp the prerogatives of this House of Delegates and other bodies of the American Medical Association.

In the opinion of the Council, it would be far better for the Board of Trustees, the Council on Medical Service and other councils of the American Medical Association to call conferences, whenever deemed advisable, on subjects on which the advice and cooperation of other bodies is desirable. In this way different groups could be called on in matters pertaining to their specific fields, and there would not be one set group to consider every subject.

The Council, therefore, requests the House to rescind its previ*ous instructions to the Council to proceed with the establishment* of a National Health Congress.

CHILDREN'S BUREAU

The Council presented a resolution to the House of Delegates at its December 1945 meeting in which a number of recommendations were made concerning the Children's Bureau. This resolution came as a result of a conference on Legislation and Public Relations held some time prior to the meeting of the House of Delegates. The House approved the resolution.

While no request for action was reported back to the Council on Medical Service, we should like to report at this time that one of the principal subjects of the resolution, the transfer of the Children's Bureau to the Federal Security Administration, is now an actuality and that the Council plans to attend a meeting in Washington in the near future, at which time it hopes it may be of considerable assistance in furthering the intent of the resolution.

FILM ON PREPAYMENT

In its regular report to the House of Delegates the Council reported on progress being made with reference to a motion picture on prepayment plans. After further study the Council believes that the project is unpractical and too expensive at the present time.

THE HILL-BURTON LAW

The following special report on the Hill-Burton Law is submitted:

SUGGESTED PRINCIPLES TO GOVERN COOPERATION IN HILL-BURTON LAW PROGRAM

I. Introduction

In extending the best possible medical care under the proposals of the Hill-Burton legislation, consideration has been given to the establishment of diagnostic and health centers in areas where the grouping of medical personnel and facilities will improve the health of the community. The success or failure of the health program under such an arrangement will depend in large measure on the leadership of the profession and the type and quality of medical care given. With this in mind the medical profession, through the Council on Medical Service and the Council on Medical Education and Hospitals of the American Medical Association, has been asked by governmental agencies *to draw up standards governing medical care in these health* centers.

II. Background

1. Action by Board of Trustees: This assignment came as the result of the following action by the Board of Trustees Sept. 19-20, 1946:

> "The Secretary and General Manager reported that he had sent Mrs. Virginia Shuler to Washington recently to consult with representatives of the United States Public Health Service regarding the Hill-Burton bill and that she had reported to the Executive Committee that those with whom she had consulted in Washington were of the opinion that the medical profession could be of great service in the Hill-Burton program if it would set up standards which would combine medical service with the health center idea. The Executive Committee voted to ask the Council on Medical Service and the Council on Medical Education and Hospitals to define a health center and to draw up standards for the rendering of medical care and preventive medical services in a health center.

> "The Board, on motion duly seconded and carried, approved the recommendation of the Executive Committee that the Council on Medical Service and the Council on Medical Education and Hospitals be asked to set up standards." (From Minutes of Board of Trustees, Sept. 19-20, 1946.)

2. Board Calls on Council: Drs. Roberts and Fitzgibbon reported this action of the Board of Trustees to the Executive Committee of the Council on September 18. They indicated the need for a set of basic principles and suggested that these be included in the reports of the Council on Medical Service and the Council on Medical Education and Hospitals to the House of Delegates.

3. News Letter, Vol. III, No. 1, October 18: "Success of Hill-Burton Program Depends on State Action" was the title of News Letter of the Council on Medical Service of October 18, giving suggestions for action and setting forth development of the Federal Hospital Council and the Advisory Committee meetings in Washington.

4. Hill-Burton Bill Provides for Standards: "Sec. 623. (d) If any state, prior to July 1, 1948, has not enacted legislation providing that compliance with minimum standards of maintenance and operation shall be required in the case of hospitals which shall have received federal aid under this title, such state shall not be entitled to any further allotments under section 624."

5. Recent Developments in Washington: Since passage of the Hill-Burton bill, a special committee was appointed by the Federal Hospital Council and a meeting of that committee was held November 7. Following is the text of a release from the Federal Hospital Council dated November 7:

> Declaring that 40 per cent of the counties in the United States have no registered hospitals, representatives of farm organizations today testified to the urgent need for hospitals and health facilities in rural sections of the country.
>
> Meeting as a committee to advise the Surgeon General, U. S. Public Health Service, on rural health problems, they pointed out that the farmers are deeply concerned about raising the health standards of their own communities. They want to know more about the cost of hospitals and how they can be built with federal aid. Moreover, they are interested in a coordinated system of hospitals that will make available modern hospital services to every person regardless of where he lives.
>
> The committee was appointed by the Federal Hospital Council, recently organized to help the Surgeon General administer the Hospital Survey and Construction Act, which provides for a nationwide program of hospital construction. While not all members of the committee were present at today's meeting, the membership includes J. Melville Broughton, Federal Hospital Council, chairman; Ransom E. Aldrich, American Farm Bureau Federation; Joseph W. Fichter, National Grange; Mrs. Gladys T. Edwards, Farmers Union; Miss Elin Anderson, Health Specialist, Department of Agriculture; Dr. M. L. Wilson, Federal Extension Service, Department of Agriculture; Mrs. Agnes Meyer, Advisory Committee to the Federal Hospital Council; Gordon Leith, National Council of Farmer Cooperatives; Dr. Michael Davis, Federal Hospital Council; Graham Davis, Federal Hospital Council, and Dr. Franklin S. Crockett, Advisory Committee to the Federal Hospital Council. William R. Ogg of the American Farm Bureau Association represented Mr. Aldrich at the meeting.

A model hospital licensing act is under consideration by a committee of ten organizations, including the American Medical Association and the American Hospital Association, and copies will be distributed by the Council on State Governments. The need of such legislation is emphasized by the development of the Hospital Construction Program under Hill-Burton legislation.

III. GENERAL RECOMMENDATIONS TO HOUSE OF DELEGATES

1. *General Recommendations:* The Council on Medical Service in its report to the present session of the House of Delegates deals generally with this subject as follows:

> At the request of the Board of Trustees, the Council has contacted the state medical societies in an effort to impress upon them the importance of preparing a plan of cooperation for putting into effect the provisions of the Hill-Burton law. When the states have completed the hospital survey and the material has been placed in the hands of the American Hospital Association, the results of these surveys will be utilized in developing a state-wide hospital construction plan. What part the medical profession plays will depend upon its preparedness and willingness to cooperate with other groups in utilizing funds provided for in the bill. As a service to the states, the Council is preparing a statement of principles as a guide to such cooperation and a set of minimal standards for diagnostic clinic facilities. Because of the extreme importance of this program, the Council presents the following recommendations to the House of Delegates:
>
> The importance of the Hill-Burton Hospital Construction bill in the overall program of medical and hospital care should be recognized by all medical societies, state and county.
>
> The medical profession, through its state and county medical societies, should be encouraged to participate actively in plans or programs formulated under the bill.
>
> This participation should include an early review of the membership of the advisory council to the state agency charged with the responsibility of carrying out the provisions of the law in order to determine the adequacy of medical representation. If necessary, action should be taken by the state medical association to obtain acceptable medical representation.
>
> This participation should include a positive effort to see that local autonomy is maintained; that facilities are placed only where a specific need for them is shown; that any diagnostic clinic facilities be erected only with the approval of the county medical society in whose area they are placed.

IV. SPECIFIC RECOMMENDATIONS

It is recommended that the following subjects receive special consideration:

(1) *Definition of a Health Center:* From the point of view of the medical profession, a health center is an institution in a community which houses the public health functions of a community and which makes available to the medical profession equipment and technical personnel to aid in the prevention, diagnosis and treatment of disease.

In the Hospital Survey and Construction Act the health center is defined as follows: "The term 'public health center' means a publicly owned facility for the provision of public health services, including related facilities such as laboratories, clinics and administrative offices operated in connection with public health centers."

2. *Principles for Operation of Health Centers:* (*a*) Cooperation with County Medical Societies: In any community in which a health center is organized, the advice and cooperation of the medical profession of that community, through the county medical society, shall be sought in order to assure cooperation and efficient use of facilities and services offered. (*b*) Participation of Practitioners: The extent to which each practitioner of a county utilizes the services of a health center shall be determined with the local medical profession. Emphasis shall be placed on the basic principle that diagnosis, treatment and medical care of the individual is not the function of a health center but of the medical profession. (*c*) Emergency Beds for Medical and Surgical Care: Since bed facilities may be required in certain communities for making a diagnosis, such beds shall be available, but patients shall be transferred to the nearest available hospital as soon as the diagnosis and condition of the patient permit. Such beds may also be available for emergency use in such instances as their use may be requested by the physician. (*d*) Radiologic, Pathologic and Other Laboratory Services: The provision of health centers is closely related to the supply of radiologic, pathologic and other special services for use of the general practitioner in areas where these services are not otherwise available. Therefore the decision for the establishment of such facilities in any health center, the remuneration for such services and other details shall be determined by joint agreement of the local public health authority and the county medical society. Principles of relationship between hospitals and radiologists, anesthetists and pathologists approved by the House of Delegates in 1944 should apply (see Proceedings of the House of Delegates of the American Medical Association, 1944, pages 78-79-80). Should it become necessary to establish agencies for standardization of radiologic, pathologic and laboratory services, the representative organizations in the fields concerned should be asked to participate. (*e*) Maternal and Child Health Care: The National Health Program of the American Medical Association states that "every child should have proper attention, including scientific nutrition, immunization and other services included in infant welfare. Such services are best supplied by personal contact between the mother and the individual physician but may be provided through child health centers administered locally with support by tax funds whenever the need can be shown." Child Health Centers may be considered a necessary part of the services of a Health Center. (*f*) Need for Experimentation in Health Center Activities: The Council is convinced that experimentation in the scope and functions of health centers will be required toward evolving satisfactory conduct of such institutions.

(*To be continued*)

Washington Letter

(From a Special Correspondent)

Dec. 16, 1946.

State Health Officers Oppose Public Medical Care Programs

The conference of state and territorial health officers adopted a committee report opposing public medical care programs such as the Wagner-Murray-Dingell compulsory health insurance proposal, because of the shortage of trained medical personnel in the country. The report stated that "neither state health departments nor any other state agencies would be able successfully to carry on such a program at this time." It was revealed that the shortage of administrative professional personnel is so great that 40 million persons in the United States do not have the benefit of a full time health department. Medical care in private practice, it was stated, is also too scarce to permit the extra burden which a public health care program would necessitate to be assumed. Another committee report stated that limited progress had been made in the control of leprosy in the last twenty-five years, and an increase in the number of cases was expected through contacts of servicemen during wartime and through infections brought in by immigrant labor. The 1,000 to 3,000 leprous persons in this country are mostly in the South, the disease being reported to be endemic in the native populations of California, Texas, Louisiana and Florida. Other resolutions urged that the U. S. Public Health Service expand research toward prevention or cure of tuberculosis with increased study of BCG vaccine, that local health departments have special nutrition divisions, that legislation be sought for enrichment of all white bread and flour and the addition of iodine to all table salt and that hospitals expanding under the Hospital Survey and Construction Act consider the need for more maternity facilities.

Hospital Act Explained to Health Officers

Dr. Wane Hoge, chief of the Division of Hospital Facilities, U. S. Public Health Service, explained provisions of the Hospital Survey and Construction Act to state and territorial health officers attending a five day conference in Washington. Federal aid will be given to the states and territories so that they can build enough hospitals to serve all the people. The act provides two funds, $3,000,000 for surveys and planning, and another for construction, totaling $375,000,000, which has not yet been appropriated. The federal government will pay a third and the states two thirds of the costs of surveys based on population. Construction allotments will be based on population and per capita income. New hospitals will be required to serve every race, creed and color.

Congress to Consider Bills to Curb Sale of Sleeping Drugs

Two bills will be introduced in the eightieth session of Congress to curb bootlegging and illegal sale of barbiturates and other sleep-inducing drugs. A bill sponsored by medical and pharmaceutical groups would be all embracing in scope, seeking to control the traffic in such drugs from the manufacturer to the consumer. Providing for control at the state level, it is expected to afford a "near perfect" check on all hypnotic drugs, according to Dr. Augustus C. Taylor, president of the pharmacy board. Another bill, sponsored by the District of Columbia Federation of Women's Clubs, aims to check illicit sales of sedatives at the retail druggist level, but Dr. Taylor says this measure does not go far enough.

Reformatory Inmates to Assist in Research on Common Cold

Inmates of Lorton Reformatory here have volunteered to assist in research being conducted by the National Institute of Health on the common cold. They will be infected with colds in groups of 8 or 10 volunteers, and nasal and throat washings will be used to cultivate the cold organism, believed to be a virus. It is hoped to develop effective vaccines and drugs. Dr. Norman Topping, who developed the serum used against Rocky Mountain spotted fever, will conduct the experiments as part of the $50,000 cold research program.

General Erskine Accuses Communities of Neglecting the Disabled

Major Gen. Graves B. Erskine, U. S. C., chief of the Labor Department's retraining and reemployment administration, informed a veteran affairs conference here that "too many communities have allowed their disabled citizens to depend for their existence on pensions and charity instead of making sure that these persons had the opportunity of taking part in a rehabilitation program." The general declared that he had seen on the streets of Washington "more beggars, most of them disabled, than in any city outside of China." Walter Bura, director of the Veterans Administration Prosthetic Appliance Service, declares that there has been improvement in both the quality and the quantity of artificial limbs being supplied.

Mental Illness Reported to Be Bigger Problem Than Poliomyelitis

Dr. Addison Duval, clinical director of St. Elizabeths Hospital, told parent-teacher groups that "mental illness is a bigger problem than poliomyelitis." He estimated that 1 out of every 25 children entering high school this year could be expected to be a patient in a mental hospital. Dr. Duval said that nearly half of the naval mental patients at the hospital suffering from "gross mental illness" came from homes broken before the child was 13 years old.

Dr. Sterling V. Mead, New Dental President, Honored

Dr. Sterling V. Mead, new president of the American Dental Association, was tendered a testimonial dinner here by 400 well wishers, among them the medical chiefs of the Army, Navy and Veterans Administration and leaders in the dental and medical professions. Dr. Joseph A. Madden, president of the District of Columbia Dental Society, presented a 16 gage shotgun to Dr. Mead, an ardent sportsman.

Miss Frances Perkins Opposes Physical Examinations for Federal Workers

Miss Frances Perkins, U. S. Civil Service Commissioner, has expressed her opposition to physical examinations for federal workers. Under existing laws all new federal employees are required to produce doctor's certificates. The Council of Personnel Administration has worked out a new, improved certificate for this purpose.

Veterans Advisory Group

Dr. Charles W. Mayo of the Mayo Clinic, Rochester, Minn., has been named chairman of a special advisory committee on medical care for veterans, formed by the Veterans Administration with a membership of nineteen nationally known doctors, nurses, social workers and dietitians. The group will give advice regarding policy on all phases of treatment and care in veterans' hospitals and homes.

National Requirements for Student Nurses

Beatrice R. Ritter, director of nursing at Gallinger Hospital, told the Maryland-District of Columbia Hospital Association that 41,000 student nurses would be needed to meet minimum nationwide requirements, but she said that the "home, school and even the church" do not encourage young women to undertake the discipline and sacrifice involved in becoming nurses.

The Closed Head Syndrome

The Army Medical Corps has issued a report on a hitherto unrecognized war malady, a brain condition traced to long exposure to the blast waves set up by exploding shells. The condition found on the tightly enclosed tissue of the brain is termed "closed head syndrome," and its symptoms include headache, ringing ears, deafness and anxiety.

Coming Medical Meetings

Annual Congress on Medical Education and Licensure, Chicago, Palmer House, Feb. 10-11. Dr. Victor Johnson, 535 N. Dearborn St., Chicago 10, Secretary.

Mid-South Postgraduate Medical Assembly, Memphis, Tenn., Feb. 11-14. Dr. Arthur F. Cooper, 1479 Carr Ave., Memphis, Secretary.

Southeastern Allergy Association, Atlanta, Ga., Jan. 18-19. Dr. Katherine B. MacInnis, 1515 Bull St., Columbia 49, S. C., Secretary.

GOVERNMENT SERVICES

ARMY

DEFERMENT FOR EXTENDED INTERNSHIP OR RESIDENCY TRAINING

According to a War Department release interns who complete their twelve month internship between April 1 and July 1, 1947 have been automatically deferred and will not be called to active duty until on or about July 1, 1947. Realizing the need of civilian hospitals for junior residents and/or interns and the desirability of continuing the deferment of as many officers as possible so that they might continue their training, the Surgeon General directed that a study be made to determine the maximum number of deferments that could be effected without too seriously jeopardizing the medical service of the Army.

As a result of this study, it has been determined that the following additional deferments will be authorized to enable officers to obtain residency or extended internship training: 1,200 are to be deferred an additional six months from July 1, 1947 to Jan. 1, 1948; 300 are to be deferred an additional twelve months from July 1, 1947 to July 1, 1948.

In order to place this program into effect, the following actions are necessary on the part of the intern and the hospital which will utilize his services as an intern or resident: The intern is to prepare a letter which the hospital of extended internship or residency will indorse. The latter is to be mailed to the Surgeon General's Office, Attention: Procurement, Separation and Reserve Section, Military Personnel Branch, Washington 25, D. C.

For the 1,200 six month deferments until Jan. 1, 1948, all hospitals will be given equal consideration. Since neither administrative machinery nor adequate hospital data are available in this office to enable the War Department to make equitable allocations of set numbers of persons to the various hospitals, deferments will be granted on the basis of approving those first received until the quota has been filled.

For the 300 twelve month deferments until July 1, 1948, priority will be given to university and teaching hospitals.

The deadline for the submission of requests for all deferments will be March 1, 1947. No request for additional deferment will be considered after this date.

DR. LEO ALEXANDER TO SERVE AS CONSULTANT AT THE NUREMBERG TRIALS

Dr. Leo Alexander of Boston is taking a leave of absence from his practice of psychiatry and neurology in order to comply with the request of the War Department for his service in Europe as a consultant to the Secretary of War. He will be at Nuremberg, Germany, in connection with the trial of major war criminals involved in crimes of a medical and scientific nature, perhaps from three to five months. A secretary who will remain in his office at 433 Marlborough Street, Boston, will be able to transmit any messages to him. Dr. Alexander as an officer in the recent war made extensive study of the criminal medical experiments in certain concentration camps in Germany.

PERSONALS

Lieut. Col. Margaret E. Aaron, who has just completed a tour of duty as deputy superintendent of the Army Nurse Corps, Office of the Surgeon General, will become chief nurse at the Army and Navy General Hospital, Hot Springs, Ark. Colonel Aaron, whose home town in Allentown, Pa., has been a member of the Army Nurse Corps for twenty-eight years.

ARMY AWARDS AND COMMENDATIONS

Brigadier General Joseph E. Bastion

The Distinguished Service Medal was recently awarded to Brig. Gen. Joseph E. Bastion, M. C., U. S. Army, commanding general of Percy Jones General Hospital at Battle Creek, Mich., for exceptionally meritorious and distinguished service from May 1943 to June 1946. Brigadier General Bastion was cited also for outstanding service as an administrator and for the high degree of medical care provided patients under his command. He graduated from Georgetown University School of Medicine in 1906 and entered the service May 5, 1910.

Colonel Idys M. Gage

The Legion of Merit was recently awarded to Col. Idys M. Gage of New Orleans. The citation stated that as surgical consultant, Fourth Service Command, from July 1943 to September 1945, he rendered meritorious service. In the face of unprecedented expansion of hospital facilities, he formulated and carried into effect the surgical program within the Fourth Service Command. This expansion resulted in the creation of many responsibilities for the training of subordinates and for the care of the sick. Dr. Gage graduated from Tulane University of Louisiana School of Medicine, New Orleans, in 1917 and entered the service July 15, 1942.

Colonel George P. Denny

The Legion of Merit was recently awarded to Col. George P. Denny of Boston. The citation stated that, as medical consultant, he was responsible for the high standard of medical service in the First Service Command hospitals from January 1944 to October 1945 and that his services were rendered with an unselfish devotion to the welfare of the sick and wounded of World War II. Dr. Denny graduated from Harvard Medical School in 1913 and entered the service June 1, 1942.

Colonel David Henry Poer

The Army Commendation Ribbon was recently awarded to Col. David Henry Poer, M. C., A. U. S., of Atlanta, Ga., for rendering exceptionally meritorious services as chief, surgical service, Newton D. Baker General Hospital, Martinsburg, W. Va., from Oct. 1, 1943 to Nov. 1, 1945. The citation stated that, during this period, Colonel Poer, by his professional skill, judgment, knowledge and unselfish devotion to duty, accomplished his assignment in an outstanding manner, reflecting great credit on his profession and the military service. Dr. Poer graduated from Emory University School of Medicine, Atlanta, Ga., in 1922 and entered the service Oct. 3, 1942.

Captain Lester E. Haushalter

The Bronze Star Medal was recently awarded to Capt. Lester E. Haushalter, M. C., A. U. S., of Milwaukee, for meritorious service in connection with military operations against the enemy in the Netherlands, Belgium and Germany from Nov. 18, 1944 to May 8, 1945. Throughout this period Captain Haushalter, a platoon leader of a station platoon, distinguished himself by his intrepid actions in the treatment and evacuation of wounded personnel under frequent enemy fire. On one occasion when a convoy in which he was riding was subjected to hostile fire, Captain Haushalter, though wounded, exposed himself to enemy fire and moved along the column to render medical aid to other casualties. The exemplary qualities and unswerving devotion to duty displayed by Captain Haushalter reflect high credit on himself and the armed forces of the United States. Captain Haushalter graduated from Marquette University School of Medicine, Milwaukee, in 1934 and entered the service May 18, 1944.

NAVY

MEDICAL ALLIED SCIENCE CORPS

Congressional legislation for a Medical Allied Science Corps is being requested by the Navy Department. Naval Reserve and temporary Regular officers in inactive as well as active status holding doctor's degrees in specialized fields related to the medical profession may apply for transfer to the regular Navy for service in this projected corps. Applications are desired from officers who hold a doctor's degree in one of the following fields: acarology, bacteriology, biology, chemistry, entomology, epidemiology, genetics, malacology, nutrition, parasitology, physics, physiology, psychology, pathology, mammology, malariology, zoology, public health (industrial hygiene), virology and public health (medical statistics).

Officers on active duty who wish to be retained under this program until legislation authorizing the proposed new classification is passed or fails of enactment should submit applications to their commanding officers. Qualified officers on inactive duty should submit applications to the commandant of their home naval district and may then be ordered to active duty at their request if accepted. Age and physical requirements for the new corps are the same as those for the Medical, Dental and Hospital corps.

Applications will be accepted until a closing date is specified. Restrictions as to submission of requests within six months after release to inactive duty or resignation do not apply to this program, which will be conducted in general accordance with the current regulations governing transfer to the regular Navy.

CAPTAIN BROWN AT A. M. A. HEADQUARTERS

Dr. Ernest W. Brown is now on duty at the headquarters of the American Medical Association in Chicago as executive officer for the Committee on Scientific Development of the Council on Industrial Health and in matters pertaining to industrial medical education and toxicology. Captain Brown retired from the U. S. Navy in July 1946 after many years of service, including service on the faculty of the U. S. Naval Medical School in Washington as head of the Department of Environmental Hygiene and as medical director of the New York and Washington shipyards. During the war he was in the office of the Surgeon General of the Navy in charge of industrial hygiene research, chemical warfare medicine and submarine medicine and as liaison officer to the Committees on Industrial Medicine and Armored Vehicles of the National Research Council. Captain Brown graduated from George Washington University School of Medicine and attended Johns Hopkins School of Public Health in 1936-1937. He also has a Ph.D. from Yale University in biochemistry.

PERSONAL

Capt. T. J. Carter (MC), U.S.N., medical officer in command of Naval Research Unit No. 3 was invited to preside on one day of the first Public Health Congress held under the patronage of King Farouk in Cairo, Egypt, the week of November 4. Three of the papers presented at the congress were delivered by officers of U. S. Naval Medical Research Unit No. 3.

NAVY AWARDS AND COMMENDATIONS

Lieutenant (jg) John De Carlo Jr.

The Commendation Ribbon was recently awarded to Lieut. (jg) John De Carlo Jr., U.S.N.R., of Philadelphia for excellent service in the line of his profession as medical officer aboard a United States ship on April 2 and April 12, 1945 during the amphibious assault and capture of Okinawa. On each of these occasions according to the citation, when his ship went to the aid of another vessel which had been hit and left blazing by an enemy suicide plane, as medical officer of the fire and rescue party, he organized first aid groups and directed their participation in the rescue parties at great personal risk from exploding ammunition, gasoline and threatened attack by enemy planes. By his initiative, courage and devotion to duty he contributed materially to the success of this amphibious operation. His conduct and courage throughout were in keeping with the highest traditions of the United States Naval Service. Dr. De Carlo Jr. graduated from Jefferson Medical College in February 1944 and entered the service Oct. 10, 1944.

MISCELLANEOUS

CHANGES IN SURPLUS PROPERTY DISPOSAL PROCEDURES

Sweeping changes in surplus property disposal procedures affecting veterans have been announced by the War Assets Administration, after approval by a committee representing the five leading national veterans' organizations. The changes are:

1. Elimination of unavailable, unserviceable and no demand items from the "set aside list" of goods reserved for sale to veterans exclusively. This action reduced the list from 356 to about 111 items, which include the categories of motor vehicles, fractional horsepower motors, medical, dental and surgical supplies and office machinery, appliances and furniture.

2. Discontinuance of national allocation of such property among the six WAA zones and its offering on a where is, as is basis to cut costs and delays.

3. Acceptance of all certificates after December 9 on a first come, first served basis, regardless of chronological order of issuance.

4. Discontinuance on December 10 of certification for items on set aside list, because of the existing high proportion of certification for items available in the surplus inventory, and a drive to dispose of all of them by February 28, after which date no certificates for such items will be accepted.

In approving the changes, the Veterans Committee requested the director of the WAA Veterans Division to supply data to guide its consideration of the whole subject of surplus property disposal to veterans with a view to legislative recommendations to the next Congress. The committee believes that the changes now being made are necessary in interest of the veterans and the public.

SURPLUS MEDICAL EQUIPMENT ON SALE IN ST. LOUIS

About $8,000,000 worth of surplus medical equipment and supplies are being offered for sale at fixed prices at the St. Louis medical depot, including surgical, dental, professional and scientific instruments valued at about $3,250,000 and x-ray equipment and supplies valued at about $2,500,000.

The equipment, already offered to federal agencies, will be offered to other priority claimants as follows: December 4, 5, 6, 9 and 10, veterans of World War II; December 10 and 11, Reconstruction Finance Corporation for small business; December 11 and 12, state and local governments; December 12 and 13, eligible nonprofit institutions. All other buyers may purchase from December 16 to January 10. This material will be on display at the depot, 412 South 12th Street, St. Louis, until 3:30 p. m. except Saturdays, Sundays and holidays. However, buyers may inspect only on dates assigned for purchase.

Veterans of World War II must be certified at the nearest WAA certifying office. Any individual business or group of small businesses interested in buying should apply to the nearest RFC office for qualification, and an RFC representative will buy for them at the depot. Nonprofit institutions must also be certified and may obtain necessary information by applying to their nearest WAA office. Minimum sales requirement is $25 for veterans and $100 for commercial buyers.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education and public health.)

ALABAMA

Charles Goss Appointed Professor of Anatomy.—Dr. Charles Mayo Goss, since 1938 head of the department of anatomy, University of Alabama School of Medicine, University, has been appointed professor and head of the department of anatomy, Louisiana State University School of Medicine, effective February 1. Dr. Goss graduated at Yale University School of Medicine, New Haven, Conn., in 1926.

COLORADO

Laboratory for Study of Toxicity of Various Heavy Metals Under Construction.—A new research laboratory is being constructed in the Division of Industrial Hygiene, University of Colorado School of Medicine, to carry on an investigation of toxicity of various heavy metals, particularly cadmium, and the maximum atmospheric and biologic concentrations which can be withstood without injury to the individual. According to the *Industrial Hygiene Newsletter*, the last real work on cadmium poisoning was done in 1932, results of which have shown that cadmium is stored in the spleen, liver, kidneys and bone. The most common exposure in industry is by inhalation of cadmium fumes and dust. A few fatal cases from cadmium fumes have been reported, but little is known concerning its action when it is administered in small doses over long periods. The industrial hygiene and heavy metal laboratories have been merged into one large, modern and well equipped workroom. Dr. Erving F. Geever, Denver, is the new medical director of the research project with medical students at the University of Colorado as his assistants. It is expected that the immediate phase of the work, cadmium toxicity, will require from two to five years to obtain complete information on all the problems involved, so in a short time the staff will begin the new research.

ILLINOIS

Chicago

The McArthur Lecture.—The twenty-third Lewis Linn McArthur Lecture of the Frank Billings Foundation will be delivered at the Palmer House on Friday evening, February 28, by Dr. Robert H. E. Elliott Jr., department of surgery, Columbia University College of Physicians and Surgeons and the Presbyterian Hospital, on "A Reevaluation of Splenectomy in Thrombocytopenic Purpura, Based on a Twenty-Seven Year Combined Clinic Follow-Up."

Special Society Elections.—At a meeting of the Chicago Tuberculosis Society on October 24 Dr. Hugo T. Cutrera was elected president, Dr. Jacob L. Marks vice president and Dr. George W. Holmes secretary-treasurer. Dr. J. Arthur Myers, Minneapolis, presented a paper at the meeting on "Early Tuberculosis."——Dr. Theodore B. Bernstein has been chosen president-elect of the Chicago Society of Allergy. Dr. William A. Mowry, Madison, Wis., is president and Dr. Edward G. Tatge, Evanston, secretary-treasurer.

Arthur Newitt New Tuberculosis Control Officer.—Dr. Arthur W. Newitt, senior surgeon, U. S. Public Health Service, has been selected to the new office of tuberculosis control officer of Chicago, newspapers reported December 7. Dr. Newitt's appointment was asked by Dr. Thomas Parran, Surgeon General, U. S. Public Health Service, on the condition that he be on leave from the service only long enough to establish the Chicago tuberculosis office. Dr. Newitt has been in public health service as tuberculosis control consultant since 1931 and in the last two years has made control surveys in Chicago, Cook County and New York City.

Research in Atmospheric Environment and Aviation Medicine.—Medical research in atmospheric environment and aviation medicine will be accelerated at the University of Illinois with the completion next summer of a new physical environment addition to the Research and Educational Hospitals at the Chicago Professional College Campus, Polk and Wood streets. Architects are now at work on the final drawings for the new addition, a one story structure with sufficient ceiling height to house a large pressure and temperature controlled chamber, a large psychrometric room and an acoustic laboratory. Cost of the research addition will be $250,000. An additional expenditure of $250,000 will be made for the major portion of the research equipment, which, because of its size, must be installed before the walls of the building are completed.

KANSAS

William Roth to Head Psychiatry Department.—Dr. William Roth, recently released from the U. S. Naval Reserve and formerly of Franklin, Tenn., has been appointed the first fulltime head of the department of psychiatry of the University of Kansas School of Medicine, Kansas City. The training facilities of the department will be enlarged. Dr. Edward T. Gibson, who is also in private practice, will continue as professor of neurology and psychiatry.

MARYLAND

Marcia Noyes Dies.—For the first time in the one hundred and sixteen years' existence of the Medical and Chirurgical Faculty of Maryland, Baltimore, a funeral was held from its quarters, November 27, with services for Miss Marcia C. Noyes, who died November 24 at Eudowood Sanatorium. Miss Noyes last April celebrated her fiftieth anniversary as secretary and librarian of the faculty; for years she lived in a penthouse atop the faculty building, 1211 Cathedral Street (The Journal, April 13, p. 1040).

MASSACHUSETTS

Eye Bank at Massachusetts Infirmary.—An eye bank is being opened at the Massachusetts Eye and Ear Infirmary, Boston, a branch of the Eye Bank for Sight Restoration, Inc. The bank is said to be the second such affiliated unit to be established in the country. In the procedure for persons donating their eyes after death for use in the cornea transplant operation, donors are asked not to make the gift a part of their wills, as a will is not effective immediately. Eyes must be enucleated by at least one hour after death. Because of such medical technicalities it is at this time necessary for the donor to die in a hospital. For this reason the donation is made beforehand on a special blank sent by the eye bank on request.

MICHIGAN

Dr. Coller Honored.—The Detroit Academy of Surgery designates its November 14 meeting "The Frederick A. Coller Meeting" to honor Dr. Coller, professor and chairman of the department of surgery, University of Michigan Medical School, Ann Arbor.

Annual Postgraduate Conference.—The first annual Michigan Postgraduate Clinical Conference will be held in Detroit March 11-14, 1947. The conference, featuring an all Michigan program of physicians and surgeons, will be sponsored by the Michigan State Medical Society with the cooperation of the University of Michigan Medical School, Ann Arbor, Wayne University College of Medicine, Detroit, Wayne County Medical Society, University of Michigan Department of Postgraduate Medicine and the Michigan Foundation for Medical and Health Education. Clinics in Detroit hospitals will be held Tuesday morning, followed by clinical presentations and lectures from Tuesday noon to Friday noon in the Book-Cadillac Hotel. Formal luncheons will be held on March 12-13, and two symposiums will feature Tuesday and Thursday evenings. The banquet is scheduled at the Book-Cadillac Hotel, Wednesday, March 12. The program will be available early in February. Dr. Grover C. Penberthy, Detroit, is chairman of the committee on arrangements and program, and Dr. L. Fernald Foster, Bay City, is secretary.

NEW YORK

Foster Child Care Study.—An extensive survey of the problems surrounding the foster care of about 40,000 children in New York State was begun November 26 by the special committee of social welfare and relief of the Joint Legislative Committee on Interstate Cooperation. A preliminary report on the committee study will be presented to the 1947 legislature.

Street Named for Physician.—A recently completed street north of the Mary Imogene Bassett Hospital, Cooperstown, has been named Atwell Road in memory of the late Dr. Floyd J. Atwell. A memorial resolution was adopted by the village board of trustees recently. At his death Aug. 24, 1940 Dr. Atwell had been head of the obstetric department of Mary Imogene Bassett Hospital and health officer of the town of Otsego for more than twenty-five years. He had been a member of the staff of Bassett Hospital for eighteen years and had served for several years as physician of Cooperstown High School.

Director for New Health Department.—Dr. Frank E. Coughlin, formerly district state health officer, has been named full time health commissioner of Rensselaer County, effective November 1. Dr. J. C. Boland, formerly health officer of Troy, has been named deputy county health commissioner. Rensselaer was the first county in the state to adopt a plan for the organization of a county health district under public health legislation enacted this year. The city of Troy, in approving the plan, under which both city and rural health service will be administered, became the first city in the state to take advantage of the expanded health program. The appointment of Dr. Coughlin was one of the first official acts of the new board (The Journal, October 12, p. 342).

Interdepartmental Health Council.—On October 5 Governor Dewey announced the designation of an Interdepartmental Health Council to consist of the state commissioners of health, social welfare, mental hygiene and education. Hon. Lee B. Mailler, chairman of the New York State Health Preparedness Commission, will serve as an advisory member. Governor Dewey said that the need for the council is clear because public health is a field which touches many phases of community life. The functions of numerous state agencies in addition to the Department of Health are involved. At the recent session of the legislature a vastly expanded program for the integration of public health services, stimulated by the extension of state aid to the localities, particularly to the cities, was initiated. In addition, legislation was passed providing for an all out attack on tuberculosis which, it is contemplated, will require eventually a contribution by the state of $7,000,000 per annum in addition to monies heretofore expended on public health services by the state. The council will formulate and place in operation, through the departments, the necessary implementation for this program. The new council, in addition to coordinating activities already undertaken or to be started this year, will have the function of studying and recommending action on unmet or inadequately covered public health needs. These problems include school health, maternity and school hygiene, the need for expanding psychiatric clinic services, the relocation of physicians, industrial health and accident prevention.

New Research Unit for Mental Diseases.—Henry W. Nissen, Ph.D., since 1939 assistant director of the Yerkes Laboratories of Primate Biology, which are conducted by Yale and Harvard universities at Orange Park, Fla., has been appointed in charge of a newly created unit for biopsychologic research in mental diseases at Rockland State Hospital, Orangeburg. The new unit will be operated under the joint auspices of the Rockland State Hospital, the New York State Psychiatric Institute, New York, and the Council for Research in Social Sciences of Columbia University. Supervising the program of the unit is a scientific advisory committee which is a subcommittee of the Columbia University Council on Research in the Social Sciences. The chairman of the committee is Dr. Dolan D. C. Lewis, director of the New York State Psychiatric Institute; his associates are Karl S. Lashley, Ph.D., Sc.D., Orange Park, Fla., of Harvard University, Robert M. Yerkes, Ph.D., New Haven, Conn., Yale University, Henry E. Garrett, Ph.D., Columbia University, Carney Landis, Ph.D., New York, of the Psychiatric Institute staff, Dr. Russell E. Blaisdell, Orangeburg, N. Y., director, and Mr. Frederic Carnochan, member of the board of visitors, Rockland State Hospital. Elaine F. Kinder, Ph.D., senior psychologist at Rockland State Hospital, is secretary. An administrative committee consists of Dr. Frederick MacCurdy, New York, Dr. Lewis, Dr. Blaisdell and Mr. Carnochan, with Dr. Landis as secretary. The contemplated research will be geared to accomplish three purposes: to achieve meaningful analytic description of abnormal mental processes, to foster integrated studies of abnormal behavior, with appreciation of its more or less regular patterns and sequences and of the interactions of many forces which produce it, and to apply objective, naturalistic methods of experimentation such as are used in comparative psychology. The term "biopsychology" is applied to the project because its technics and approaches will be drawn from those already used with success in the fields of experimental biology and psychology. The work of the unit will be in large measure a cooperative effort of the investigators conducting the experiments and members of the hospital staff who are in charge of the clinical management of the patients.

New York City

Personal.—Dr. John J. Young, Brooklyn, a police department surgeon for sixteen years, has been promoted to the newly created position of deputy chief surgeon of the department. Dr. Eugene H. Pool has been appointed acting medical director for the Medical and Surgical Relief Committee of America.

Site for Cancer Hospital Given to City.—Memorial Hospital for the Treatment of Cancer and Allied Diseases has deeded to the city of New York a site for the construction of a 300 bed hospital for the care of indigent patients with cancer. The city hospital, to be called the James Ewing Hospital in honor of a former director of Memorial Hospital, will cost $3,500,000. The site consists of land on the east side of First Avenue between East Sixty-Seventh and East Sixty-Eighth streets. It is part of the block between these two streets and York and First avenues, given to Memorial Hospital in 1936 by John D. Rockefeller Jr. to create an integrated center for the study and treatment of cancer. The hospital is to be under the supervision of the department of hospitals, which will cooperate closely with Memorial Hospital.

PENNSYLVANIA

Personal.—Dr. Harvey F. Smith, Harrisburg, was elected president of the Harrisburg Chamber of Commerce, October 14. He is said to be the first physician to hold the office in Harrisburg.——Dr. Elmer Hess, Erie, has been appointed a member of the Pennsylvania Board of Medical Education and Licensure, succeeding the late Dr. Paul R. Correll.

Philadelphia

Fraternity Lecture.—Dr. Charles Herbert Best, Toronto, Ont., professor and head of the department of physiology and director of the Banting-Best Department of Medical Research, University of Toronto Faculty of Medicine, Ontario, was the speaker at the annual lecture given under the auspices of the Alpha Omega Honorary Medical Society of the Jefferson Medical College of Philadelphia, November 7.

Chevalier Jackson Honored.—Dr. Chevalier Jackson, professor and head of the department of bronchoscopy, Temple University School of Medicine, was presented with a gold medal on behalf of students at the University of Buenos Aires for his work in training South American physicians. The presentation was made by Oscar Ivanissevich, Argentine ambassador to the United States, during a meeting of the Pan American Association of Philadelphia.

Centennial Meeting.—At the one hundredth anniversary banquet of the Northern Medical Association in the Bellevue Stratford Hotel, December 5, Richard H. Shryock, Ph.D., professor of history, University of Pennsylvania, will compare the outlook of the physician of 1946 with what it was in 1846. The Northern Medical Association, the second oldest medical society in Philadelphia (The Journal, February 23, p. 520), was formed Dec. 5, 1846 to serve the "outlying" sections to the north of the city, including the districts of Spring Garden, Frankford, Germantown and Northern Liberties. Dr. William Wayne Babcock, professor of surgery, Temple University School of Medicine, was toastmaster. Dr. Myer Solis-Cohen, president of the association, and Dr. Maurice S. Jacobs, chairman of the anniversary committee, were speakers. There was a historical exhibition of portraits, letters and minute books. A feature of the occasion was the presentation to those in attendance of a 144 page history of the association, containing portraits and biographies of its eighty-eight presidents as well as other historical articles.

UTAH

Laboratory for Metabolic Disorders.—A grant of $27,750 has been made to the University of Utah School of Medicine for the further support of a study of muscular dystrophy and other hereditary and degenerative disorders. This supplements the grant of $92,000 made last year by the U. S. Public Health Service, Research Grants Division, for the same purpose. With these funds it has been possible to establish at the university a Laboratory for the Study of Hereditary and Metabolic Disorders, of which Dr. Maxwell M. Wintrobe, Baltimore, professor and head of the department of medicine, is director. The activities of this laboratory will be divided among three divisions: the division of biochemistry and physiology, of which Francis Binkley, Ph.D., New York, and Emil L. Smith, Ph.D., are in charge, the division of genetics with Fayette B. Stephens, Ph.D., in charge and the clinical division. The chief of the clinical division, who will also act as assistant director of the study, has not yet been selected. A metabolic ward at the Salt Lake General Hospital forms part of the clinical division The staff of the metabolic ward includes Dr. Virginia Davenport, formerly of the Peter Bent Brigham Hospital, Boston Dr Binkley, who received his Ph.D. degree under Vincent du Vigneaud, Ph D., New York, at Cornell, comes from the Rockefeller Institute for Medical Research, where he was associated with the late Dr. Charles L. Hoagland, New York, in studies on muscular dystrophy and on hepatic diseases. He is now associate research professor of biochemistry and medicine at the University of Utah School of Medicine. Dr. Emil L. Smith received his basic training with Dr. Selig Hecht, Ph D, New York, Columbia University, Max Bergmann, Ph D, New York, at the Rockefeller Institute and Dr L. E. Vickery. He is now associate research professor of biochemistry and physiology at the University of Utah School of Medicine The Laboratory for the Study of Hereditary and Metabolic Disorders is being equipped with the finest modern physical and chemical equipment

GENERAL

Occupational Therapy Editor.—Dr Sidney H Licht, New York, will assume editorship of *Occupational Therapy and Rehabilitation* with volume 26 in February 1947. The journal will continue to issue one volume a year, consisting of six issues Subscription will be $5, and the publishers are the Williams & Wilkins Company, Baltimore 2

Special Society Elections.—Dr. Hal M Davison, Atlanta, was chosen president-elect of the American College of Allergists at its recent meeting, and Dr Leon Unger, Chicago, was installed as president Other officers include Drs. George E. Rockwell, Milford, Ohio, and Willard S. Small, Pasadena, Calif, vice presidents, and Dr. Fred W. Wittich, Minneapolis, secretary-treasurer, reelected.

Group Therapy Association.—The fourth annual conference of the American Group Therapy Association will be held at the Hotel New Yorker, January 10-11 One session will be devoted to a report on "Parallel Group Treatment of Preschool Children and Their Mothers," one to "Research and Training in Group Therapy" and one to "Group Psychotherapy in Private Practice." Additional information may be obtained from the American Group Therapy Association, 228 East 19th Street, New York 3

Narcotic Violations.—The United States bureau of narcotics announces the following:

Dr John C Hattaway, Edison, Ga, pleaded guilty in the U S District Court of Albany to violations of the Federal Narcotic Law, October 14, and was placed on probation for a period of three years

Dr John Peter Weber, Boise, Idaho, was convicted in the U S District court of Boise of the violation of the Federal Narcotic Law, October 21, and was sentenced to pay a fine of $3,750

Dr Boris Schleifer, Brooklyn, pleaded guilty in the U S District court, Brooklyn, to violation of the Federal Narcotic Law, April 7, and was sentenced to a term of two years

Dr Charles E Moore, Carolina Beach, N C, pleaded guilty in the U S District court at Wilmington, N C, October 23, to violation of the federal Narcotic Law, his sentence of twelve months was suspended and he was placed on probation for a period of two years

Dr Luther A Nye, Okemah, Okla, pleaded guilty in the U S District court of narcotics, Oklahoma, August 23, to violation of the Internal Revenue Code, and his sentence of five years was suspended and he was placed on probation for a similar period

New Society for Clinical Research.—The Western Society of Clinical Research was organized at a meeting in San Francisco November 1-2. Dr. Gurth E Carpenter, Beverly Hills, Calif, was chosen president, Dr. Mayo H. Soley, San Francisco, vice president and Dr. Helen E Martin, Los Angeles, secretary Among the papers presented at the first meeting were

Dr Lowell A Rantz, San Francisco, Group A Hemolytic Streptococcus Antibody Production in Human Beings Following Immunization
Dr Henry K Silver, San Francisco, Mechanism for the Development of Resistance to Streptomycin
Dr Robert F Rushmer, Los Angeles, Relation of Experimentally Induced Internal Injuries to Lesions Produced in Aircraft Accidents
Dr Norman L Freeman, San Francisco, Direct Measurement of Blood Pressure within Arterial Aneurysms and Arteriovenous Fistulas
Dr Blair V Jager, Salt Lake City, Treatment of Rheumatoid Arthritis with Massive Doses of Salicylates, with Particular Reference to Modification of Plasma Protein Constituents During Therapy
Dr James F Rinehart and L D Greenberg, Ph D, San Francisco, Observations on Thiamine Metabolism

Tropical Medicine Award Goes to Australian.—The American Foundation for Tropical Medicine presented the Richard Pearson Strong Medal, November 26, to Dr. Neil Hamilton Fairley, professor of tropical medicine, London School of Hygiene and Tropical Medicine The presentation was made by Col. Strong, U. S. Army Medical Corps, retired, for whom the medal and award were named and who received them first in February, 1944. The award, together with a $500 cash honorarium, was established by the foundation through a gift by the Winthrop Chemical Company, Inc It is struck in the white metal palladium, which is rarer than gold The citation for the 1947 award declared that Dr Fairley, as brigadier of the Australian Army Medical Corps, who directed the land headquarters medical research unit of the Australian army at Cairns, Australia, obtained information on tropical diseases, notably malaria, scrub typhus and dengue fever that "made possible an earlier termination of the war against the Japanese Empire."

Fellowships in the Medical Sciences.—Fellowships in the Medical Sciences, similar to those which have been administered by the Medical Fellowship Board of the National Research Council since 1922, will again be available for the year 1947-1948. These fellowships, supported by grants from the Rockefeller Foundation to the National Research Council, are designed to provide opportunities for training and experience in research in all branches of medical science They are open to citizens of the United States or Canada who possess an M D or a Ph D. degree and are intended for recent graduates who are not yet professionally established In addition to these fellowships the Medical Fellowship Board administers two groups of research fellowships, made available through a grant from the National Foundation for Infantile Paralysis, Inc The first group, open to applicants who hold either the Ph D or the M D. degree, is for the purpose of providing opportunities for special training and experience in the study of filtrable viruses The second group, open only to graduates in medicine who have completed one or more years of hospital experience in clinical surgery and are planning a career in orthopedic surgery, is designed to provide opportunities for training and research in those basic medical sciences which will be of particular value in furthering progress in the field of orthopedic surgery. A series of fellowships in anesthesiology has been established through a grant from the American Society of Anesthesiologists. These fellowships are offered with a view to fostering a closer union between the clinical practice of anesthesiology and the fundamental disciplines on which anesthesia rests Applicants must hold the M D degree and must have completed one or more years of hospital experience as intern or resident The Medical Fellowship Board of the National Research Council has also under its jurisdiction a number of fellowships of senior grade in internal medicine (Welch fellowships), virus diseases, orthopedic surgery and pediatrics for individuals of proved research ability. Fellows will be appointed at a meeting of the Medical Fellowship Board early in March, 1947. Applications to receive consideration at this meeting must be filed on or before January 1 Appointments may begin on any date determined by the board. For further particulars concerning these fellowships, address the Secretary of the Medical Fellowship Board, National Research Council, 2101 Constitution Avenue, Washington 25, D C.

Marriages

Kenneth Frederick Eather, Eureka, Nev, to Miss Elizabeth Ann Worthington of Wyncote, Pa, July 27.

William Thomas Parrott Jr., Kinston, N. C., to Miss Fannie Mae Sellers at Waynesboro, Miss, June 19

William Herbert Hall Jr to Miss Helen Mae Moore, both of Jamestown, N. Y, in New York June 15.

Seymour S Rogers, New York, to Miss Dorothy Stewart of Henderson, N C, in Greensboro, September 3.

Harry Penn Harper, Fort Snelling, Minn, to Miss Virginia Louise MacDonald in St Paul recently

Elwood Otho Horne, Worcester, Mass, to Miss Dorothy Louise Schock of Philadelphia August 3.

Frederick C Brush, Shenandoah, Iowa, to Miss Florence Fillenwarth of Charles City, August 30

Henry Bailey Dickens Jr. to Miss Barbara Baker Burgess, both of Fernandina, Fla, September 3

Claude C. Coleman Jr to Miss Jeanette Murdoch Kayhoe, both of Richmond, Va., September 7.

Willis H Hodges Jr, Columbus, Ohio, to Miss Rita Florence Schroeder of Cincinnati June 29.

Mark Baum, Ashton, Idaho, to Miss Charleine Louise Chenoweth of Glendale, Calif. August 10

John Alden Woodcock, Bangor, Maine, to Miss Joan Carlin of Garden City, N. Y, June 15.

Russel W. Weiler, Columbia, Pa, to Miss Carol Bahler of Upper Darby in August.

Raymond N. Brown to Miss Joan Sayers, both of Washington, D C, June 22

Deaths

Roland Chatham Connor ⊕ New York; born in Madison County, Texas, Oct. 8, 1876; University of Texas School of Medicine, Galveston, 1904; delegate to the American Medical Association from the Medical Association of the Isthmian Canal Zone in 1925; life member and past president of the Canal Zone Medical Association; member of the American Academy of Tropical Medicine, American Society of Tropical Medicine and New York Society of Tropical Medicine and a fellow of the Royal Society of Tropical Medicine and Hygiene; interned at the John Sealy Hospital; from 1907 to 1911 physician for the Panama Canal at Ancon, where he was for many years chief of the medical clinic at Ancon Hospital; district physician at Cristobal, Canal Zone, from 1911 to 1914; assistant general manager of the medical department of the United Fruit Company in New York from 1925 to 1931, when he was appointed medical director, serving until his retirement on Nov. 1, 1943; died at the Mayo Clinic, Rochester, Minn., October 2, aged 69.

Judson Davie Dowling ⊕ Birmingham, Ala.; born in Daleville, Ala., April 30, 1880; Birmingham Medical College, 1911; interned at the Hillman Hospital; served as resident at the Boston Lying-In Hospital and the Sloan Hospital for Women in New York; member of the House of Delegates of the American Medical Association in 1919, 1921 and 1922; on the faculty of his alma mater from 1914 to 1917; public health officer of Birmingham and Jefferson County from 1917 to 1941; named regional director of public health services for the office of civilian defense early in World War II and later as senior surgeon of the United States Public Health Service Reserve was assigned to Arizona and New Mexico; formerly superintendent of the Eastern State Hospital in Knoxville, Tenn.; received the Birmingham *News* award as the city's "outstanding citizen" in 1923; died in Mount Olive, N. C., November 1, aged 66, of coronary thrombosis.

Florus Fremont Lawrence, Mount Vernon, Ohio; Columbus Medical College, 1885; born in Wadsworth, Ohio, March 16, 1863; served as professor of surgery, anatomy and clinical surgery at the old Ohio Medical University, clinical lecturer in abdominal pelvic surgery at Starling Medical College, and in later years clinical lecturer on surgery at Ohio State University College of Medicine; member of the American Medical Association and the American Academy of Political and Social Science; past president of the Central Ohio Medical Society, predecessor to the present Columbus Academy of Medicine, serving as president of the latter organization in 1905; served as vice president of the Ohio State Medical Association; served during the Spanish-American War and World War I; for many years on the staffs of the Lawrence, McKinley and White Cross hospitals in Columbus; died October 26, aged 83, of carcinoma of the stomach.

Gordon Frank McKim ⊕ Cincinnati; Medical College of Ohio, Cincinnati, 1903; served as professor of surgery at the University of Cincinnati College of Medicine; specialist certified by the American Board of Urology; member of the American Urological Association and past president of the North Central Branch; member of the American Association of Genito-Urinary Surgeons and the International Society for Urology; past president and vice president of the Academy of Medicine of Cincinnati; fellow of the American College of Surgeons; an officer during World War I; recipient of the honorary degree of doctor of laws from both Hanover College and Miami University; director of urologic service at Cincinnati General Hospital; affiliated with the Christ Hospital, where he died September 3, aged 67, of multiple myeloma.

Lester Lyman Strong ⊕ Cleveland; Ohio State University College of Medicine, Columbus, 1926; born in Niles, Ohio, Jan. 30, 1895; member of the Academy of Medicine of Cleveland and the Cleveland Medical Library; served in the U. S. Army in France as a laboratory worker in a base hospital during World War I; formerly an associate staff member of the Huron Road Hospital in East Cleveland; in 1944 gave up practice to devote himself to research on leukemia at the University Hospitals, where the Lester L. Strong Memorial Fund for Leukemic Research has been established, a disease with which he was afflicted and from which he died at the Lakeside Hospital November 4, aged 51.

Frank Hermance Lasher ⊕ Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1906; specialist certified by the American Board of Otolaryngology; fellow of the American College of Surgeons; served as director of the otorhinolaryngology department, Cumberland Hospital, surgeon, ear, nose and throat department, Brooklyn Eye and Ear Hospital, surgeon, otolaryngologic department, Brooklyn Hospital, consultant, Rockaway Beach (N. Y.) Hospital and Dispensary and on the staff of the South Nassau Communities Hospital in Rockville Centre; on the courtesy staff of the Prospect Heights Hospital; died in October, aged 63.

Grover Taylor Applegate, New Brunswick, N. J.; the Hahnemann Medical College and Hospital, Chicago, 1883; born in Red Bank, N. J., April 5, 1859; past president of the New Jersey State Homeopathic Medical Society; member of the medical advisory board of the New Brunswick Selective Service System during World War I; past president of the city's board of water commissioners; served two terms as member of the board of education; past president of the Providence Building & Loan Association of New Brunswick; formerly director of the local Y. M. C. A.; died in the Middlesex General Hospital November 4, aged 87.

Simons Ravenel Lucas ⊕ Florence, S. C.; Medical College of South Carolina, Charleston, 1910; for many years a member of the board of trustees of the University of South Carolina; served as a member of the board of trustees of St. Mary's School and Junior College for Girls in Raleigh, N. C.; fellow of the American College of Surgeons; specialist certified by the American Board of Ophthalmology; ophthalmologist to the McLeod Infirmary; served as examiner for the Selective Service Board during World War II; charter member and past president of the Rotary Club; died in Columbia October 5, aged 61, of coronary occlusion.

Oliver Dustin Barker ⊕ Parkersburg, W. Va.; Medical College of Ohio, Cincinnati, 1904; specialist certified by the American Board of Urology; member of the American Urological Association and the Academy of Medicine of Parkersburg; fellow of the American College of Surgeons; during World War I served as a captain in the medical corps of the U. S. Army, assigned to an army hospital in Belgium, serving as division urologst; county coroner; on the staffs of the Camden-Clark Memorial Hospital and St. Joseph's Hospital, where he died November 4, aged 64, of cirrhosis of the liver.

Charles Gordon Abell ⊕ Enosburg Falls, Vt.; University of Vermont College of Medicine, Burlington, 1903; for many years chairman of the Vermont Department of Public Health; delegate to the American Medical Association from Vermont in 1935 and 1936; in 1929 elected to the state house of representatives; served as village trustee, health officer, school director and president of the Enosburg Falls Savings Bank & Trust Company; died September 28, aged 68, of coronary embolism.

John Sellers Agar, Little Rock, Ark.; University of Arkansas School of Medicine, Little Rock, 1934; member of the American Medical Association; interned at the Jewish Hospital in St. Louis, where he served a residency at the Barnes Hospital; during World War II served with the naval medical corps and participated in the Tarawa and Saipan campaigns with the Second Marine Corps Division, receiving a commendation for bravery in action; died October 15, aged 37, of coronary occlusion.

William Hugh Anderson ⊕ Seattle; University of Nebraska College of Medicine, Omaha, 1905; formerly superintendent of the King County Hospital; on the staffs of the Providence and Doctors hospitals; physician for Spanish war veterans; died October 23, aged 69, of heart disease.

Charles Francis Beeson ⊕ Roswell, N. M.; Miami Medical College, Cincinnati, 1898; also a graduate in pharmacy; past president of the New Mexico Medical Society; affiliated with St. Mary's Hospital, where he died September 29, aged 78, of pneumonia.

Daniel Webster Bell, Otwell, Ind.; Chicago Homeopathic Medical College, 1904; member of the American Medical Association; served during World War I; major, medical reserve corps, U. S. Army, not on active duty; county coroner for two terms; died in the Daviess County Hospital in Washington October 12, aged 68, of cardiovascular renal disease.

Darwin E. Bell, Gracey, Ky.; Vanderbilt University School of Medicine, Nashville, 1882; died in the City View Sanitarium, Nashville, October 9, aged 84.

Robert McReynolds Biddle, Pottsville, Pa.; Jefferson Medical College of Philadelphia, 1915; medical examiner for the city public schools; served with a medical unit on the Mexican border and during World War I; on the staff of the Good Samaritan Hospital; member of the local board of health; died October 27, aged 56.

Augustus E. Bieser, Hartsdale, N. Y.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1891; member of the American Medical Association; one of the founders of the Lutheran Hospital in Manhattan; died October 24, aged 77, of coronary thrombosis.

James A. Bisgard ⊕ Harlan, Iowa; Omaha Medical College, 1894; past president of the Shelby County Medical Society; life member of the Iowa State Medical Society; died October 9, aged 77, of arteriosclerosis.

Ralph Franklin Blecker ⊕ Fresno, Calif.; University of Nebraska College of Medicine, Omaha, 1927; served as a major in the medical corps, Army of the United States, during World War II; interned at St. Catherine's Hospital in Omaha and the Franklin Hospital in San Francisco; died August 14, aged 42.

Grace S. Linforth Boalt, San Jose, Calif.; Medical Department of the University of California, San Francisco, 1898; died in September, aged 75.

Edmund Raymond Bondy ⊕ Cleveland Heights, Ohio; University of Wooster Medical Department, Cleveland, 1898; served during World War I; physician in Cleveland for the Actor's Equity Association and the Cleveland Boxing Commission; died in St. Vincent Charity Hospital, Cleveland, October 11, aged 70, of coronary disease.

Edmond Bonnot ⊕ St. Louis; St. Louis University School of Medicine, 1908; at one time on the faculty of his alma mater; died in the Barnes Hospital October 13, aged 70, of acute cardiac failure.

Eugene Herbert Boon, Oak Ridge, Tenn.; University of Nashville Medical Department, 1910; served overseas during World War I; affiliated with the medical department of the Tennessee Eastman Corporation; died in the Oak Ridge Hospital October 16, aged 62, of coronary occlusion.

Lon Hendrixson Boone, Wallins Creek, Ky.; Lincoln Memorial University Medical Department, Knoxville, 1911; died October 8, aged 59, of tuberculosis.

Nathan J. Braverman ⊕ Duluth, Minn.; University of Minnesota Medical School, Minneapolis, 1927; served during World War II; on the staffs of the St. Mary's Hospital, Miller Hospital and St. Luke's Hospital, where he died October 16, aged 44, of cerebral hemorrhage and hypertension.

Joseph Edward Burns ⊕ Buffalo; University of Buffalo School of Medicine, 1924; served during World War I; for many years on the faculty of his alma mater; on the staffs of the Buffalo General, Emergency and Meyer Memorial hospitals; died in Kenmore October 20, aged 49, of coronary thrombosis.

William Preston Burton ⊕ Covington, Va.; Jefferson Medical College of Philadelphia, 1923; medical director, superintendent and owner of the Covington General Hospital; died near Christiansburg October 20, aged 48, of injuries received in an airplane crash.

William Clark Calvert, Union, Miss.; Memphis (Tenn.) Hospital Medical College, 1903; died September 29, aged 80.

Nicola Capitolo, Philadelphia; Regia Università di Napoli Facoltà di Medicina e Chirurgia, Italy, 1904; died October 14, aged 72.

Ulysses S. Carden, La Follette, Tenn.; Tennessee Medical College, Knoxville, 1900; formerly mayor; died October 22, aged 73, of chronic nephritis.

James Quarles Chambers, Kansas City, Mo.; University of Pennsylvania Department of Medicine, Philadelphia, 1899; member of the American Medical Association; past president of the Jackson County Medical Society; honorary member of the Missouri State Medical Association; affiliated with the St. Luke's, Research and St. Mary's hospitals; died in the Kansas City General Hospital September 25, aged 76, of hemopneumothorax, as the result of fractured ribs received when he was struck by a street car.

Florence P. Simms Chapman ⊕ Topeka, Kan.; Ohio Medical University, Columbus, 1903; for many years affiliated with the Topeka State Hospital; died September 9, aged 68, of coronary thrombosis.

William Albert Clark III, Springfield, Ohio; Ohio State University College of Medicine, Columbus, 1936; member of the American Medical Association; served as superintendent of the Clark County Tuberculosis Sanatorium; member of the staff of the Springfield City Hospital; died September 25, aged 37, of acute dilatation of the heart.

Michael P. Clouse, Somerset, Ohio; Starling Medical College, Columbus, 1901; member of the American Medical Association; on the staffs of the Good Samaritan and Bethesda hospitals in Zanesville and the Mercy Hospital in Columbus; died October 1, aged 75, of cerebral hemorrhage.

Webb Conn, Brunswick, Ga.; Atlanta College of Physicians and Surgeons, 1902; member of the American Medical Association; served as health commissioner for Glynn County; died August 21, aged 67, of coronary thrombosis.

Eugene Rollin Corson, Savannah, Ga.; Hahnemann Medical College of Philadelphia, 1877; Southern Medical College, Atlanta, 1894; member of the American Medical Association; honorary member of the Medical Association of Georgia; died June 10, age 90, of carcinoma.

Frank W. Daykin, East Cleveland; Western Reserve University Medical Department, Cleveland, 1879; died October 2, aged 87, of senility.

Lela H. DeVasher, Muskogee, Okla.; Southwestern Homeopathic Medical College and Hospital, Louisville, 1904; died in the Baptist Hospital October 1, aged 86, of coronary occlusion.

William Joseph Dwyer ⊕ Boston; Tufts College Medical School, Boston, 1905; served on the Mexican border and later as a medical officer during World War I; formerly senior prison physician, Massachusetts State Prison; rating specialist for the Veterans Administration; died September 30, aged 62, of carcinoma of the lung.

William Forrest Elliott, Lincolnton, N. C.; Medico-Chirurgical College of Philadelphia, 1916; member of the American Medical Association; fellow of the American College of Surgeons; affiliated with the Gordon Crowell Memorial Hospital; died September 26, aged 60, of coronary thrombosis.

Alfred Fieldbrave, Christopher, Ill.; Bennett Medical College, Chicago, 1912; died in the Herrin (Ill.) Hospital October 6, aged 69.

Austin Alfred Foote, Elma, Wash.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1909; member of the American Medical Association; died September 30, aged 61.

James McFadden Gaston Jr., Deland, Fla.; Southern Medical College, Atlanta, 1893; retired Southern Baptist Medical Missionary, serving more than thirty years in northern China; died September 28, aged 78, of thrombosis and pulmonary embolism.

Harold Kenneth Gibson, Chicago; Northwestern University Medical School, Chicago, 1898; past president and secretary of the Chicago Gynecological Society; on the staff of St. Luke's Hospital, where he died October 24, aged 70, of bronchopneumonia.

Arthur Louis Gignac ⊕ Detroit; Detroit College of Medicine and Surgery, 1914; on the staff of St. Mary's Hospital; died in the Evangelical Deaconess Hospital October 8, aged 59, of coronary occlusion.

Abraham Lincoln Goodman ⊕ Forest Hills, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1895; also a graduate in pharmacy; formerly on the faculty of the New York Polyclinic Medical School and Hospital; during World War II received the Selective Service Medal for his service with the medical review board of selective service in Manhattan; in various capacities served on the staff of the Lenox Hill Hospital; at one time deputy chief honorary surgeon of the police department; died October 10, aged 73.

Harry H. Griffin, Columbia, S. C.; Medical College of the State of South Carolina, Charleston, 1902; also a graduate in pharmacy; honorary member of the South Carolina Medical Association; member of the American Medical Association; on the staff of the Providence Hospital, where he died October 9, aged 70, of coronary thrombosis.

Byron G. S. Gronlund, Chicago; the Hahnemann Medical College and Hospital, Chicago, 1912; medical examiner for the Prudential Life Insurance Company; died in the South Shore Hospital October 27, aged 57, of carcinoma of the head of the pancreas.

Edward James Gunning ⊕ St. Petersburg, Fla.; George Washington University School of Medicine, Washington, D. C., 1905; died September 24, aged 71, of acute myocardial failure and arteriosclerosis.

Hiram B. Hawley ⊕ Syracuse, N. Y.; Syracuse University College of Medicine, 1893; on the staff of the Crouse-Irving Hospital, where he died October 17, aged 82, of cerebral thrombosis.

William Bonde Holland, Verona, Miss.; Memphis (Tenn.) Hospital Medical College, 1893; died September 26, aged 74.

Paul Foster Hunt ⊕ Kansas City, Mo.; University of Kansas School of Medicine, Kansas City, Kan., 1926; fellow of the American College of Surgeons; interned at the Bell Memorial Hospital in Kansas City, Kan.; on the staff of the Research Hospital; died in the Central Dispensary and Emergency Hospital, Washington, D. C., in October, aged 49, of injuries received in an automobile accident.

Owen A. Hunter, Longview, Texas; Marion-Sims College of Medicine, St. Louis, 1898; died October 2, aged 69, of cerebral hemorrhage.

George F. Hutchinson, Marietta, Ohio (licensed in Ohio in 1896); died in the Marietta Memorial Hospital October 15, aged 86.

Arthur Wing Johnson ⊕ Mechanicville, N. Y.; Albany (N. Y.) Medical College, 1887; an Affiliate Fellow of the American Medical Association; past president and vice president of the Saratoga County Medical Society; for many years county coroner; died October 9, aged 82, of chronic myocarditis.

Trimble Clarence Johnson ⊕ Atlanta, Ga.; Emory University School of Medicine, Atlanta, 1918; fellow of the American College of Physicians; served during World War I; on the staffs of the Emory University Hospital and the Crawford W. Long Memorial Hospital; died October 6, aged 51, of pulmonary tuberculosis.

Constantine Peter Kalionzes, Los Angeles; National University of Athens School of Medicine, Greece, 1900; member of the American Medical Association; died October 15, aged 67.

William Vincent Kane, Lynn, Mass.; Tufts College Medical School, Boston, 1915; member of the New England Pediatric Society and the American Medical Association; on the staff of the Lynn Hospital; served during World War I; died October 11, aged 54, of heart disease.

Daniel Webster King, Wichita Falls, Texas; University of West Tennessee College of Medicine and Surgery, Memphis, 1915; died in a hospital at Fort Worth in September, aged 60.

Rae Byrd Leavell, Bastrop, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1899; member of the American Medical Association; for many years county coroner; died October 15, aged 69.

Charles E. Leedy, Wenatchee, Wash.; Detroit College of Medicine, 1897; died in the Deaconess Hospital August 5, aged 76, of Parkinson's disease.

Irving Elliott Lloyd, Mount Vernon, Wash.; University of Oregon Medical School, Portland, 1919; member of the American Medical Association; affiliated with the Indian Service; served during World War I; died October 5, aged 53.

John Charles McCann, Brighton, Colo.; Denver and Gross College of Medicine, Denver, 1908; died September 30, aged 66.

William Ambrose Nealon, Pittsburgh; University of Pennsylvania Department of Medicine, Philadelphia, 1902; member of the American Medical Association; fellow of the American College of Surgeons; on the staff of St. Francis Hospital; died October 10, aged 70, of carcinoma.

William Charles Ocasek, Berwyn, Ill.; University of Illinois College of Medicine, Chicago, 1935; member of the American Medical Association; formerly on the faculty of his alma mater as assistant and instructor in medicine; served on the staffs of the West Suburban Hospital in Oak Park, Ill., and the Grant Hospital in Chicago; died November 11, aged 39, of coronary occlusion.

William Isaac Parker, Lamont, Iowa; the Hahnemann Medical College and Hospital, Chicago, 1891; city health officer; on the staff of the Peoples Hospital; died September 15, aged 82, of carcinoma of the bladder and prostate.

James Francis Peattie, San Francisco; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1912; for many years chief surgeon for the Tide Water Associated Oil Company; member of the staff of St. Francis Hospital; died October 11, aged 62, of coronary occlusion.

Eugene Curtis Peck ⊕ Leonardtown, Md.; Harvard Medical School, Boston, 1919; diplomate of the National Board of Medical Examiners; county health officer; at one time instructor at St. John's University Medical School in Shanghai, China, where he was a medical missionary; died October 9 aged 51, of chronic myocarditis.

Willy Picard, Berkeley, Calif.; Albert-Ludwigs Universität Medizinische Fakultät, Freiburg, Baden, Germany, 1917; interned at the Mount Zion Hospital in San Francisco; died September 30, aged 59.

Albert Stanley Pike, Rochester, N. Y.; University of the City of New York Medical Department, 1896; died in the Genesee Hospital October 3, aged 77, of a cerebral concussion incurred in a fall and coronary thrombosis.

Corwin Richie Price, Geneva, Ind.; Fort Wayne (Ind.) College of Medicine, 1903; served during World War I; died October 1, aged 69, of cerebral hemorrhage.

Walter Hall Pulsifer ⊕ Whitman, Mass.; Tufts College Medical School, Boston, 1908; died September 26, aged 62, of coronary thrombosis.

James Harvey Raymond, Honolulu, Hawaii; Rush Medical College, Chicago, 1893; on the staff of the Queen's Hospital; died August 8, aged 79, of cerebral hemorrhage.

Frank Julius Resch ⊕ Chicago; Loyola University School of Medicine, Chicago, 1918; on the staff of the Grant Hospital; died October 12, aged 58, of coronary thrombosis.

Frank Eugene Ryan ⊕ McLean, N. Y.; Syracuse University College of Medicine, 1914; health officer for the town of Groton and health inspector for the Virgil and McLean schools; on the staff of the Cortland County Hospital in Cortland; died October 19, aged 57, of cerebral hemorrhage.

Ernest S. Sampson, North Syracuse, N. Y.; Albany (N. Y.) Medical College, 1882; died September 27, aged 90, of arteriosclerotic heart disease.

Alfred Joseph Nelson Shiel ⊕ New York; University of Colorado School of Medicine, Denver, 1926; served in France with the medical corps of the U. S. Army during World War I; for many years affiliated with the Bellevue Hospital; died October 1, aged 52, of coronary disease.

William Evert Smith, San Francisco; University of Oregon Medical School, Portland, 1907; served in the U. S. Navy during World War I; died October 20, aged 71, of cerebral hemorrhage.

Raymond John Sprowl ⊕ Spokane, Wash.; University of Pennsylvania School of Medicine, Philadelphia, 1913; member of the Pacific Coast Oto-Ophthalmological Society; served as a major overseas during World War I; member of the staff of the Deaconess Hospital; died October 30, aged 58, of coronary occlusion.

Peter Strofs, Chicago; University of Illinois College of Medicine, Chicago, 1931; member of the American Medical Association; on the courtesy staff of the Mother Cabrini Hospital; affiliated with the Veterans Administration Facility, Hines, Ill.; died in the Michael Reese Hospital November 5, aged 43, of chronic myelogenous leukemia.

John Martin Taylor ⊕ Boise, Idaho; University of Pennsylvania Department of Medicine, Philadelphia, 1900; fellow of the American College of Surgeons; honorary member of the Idaho State Medical Association; member of the staff of St. Luke's Hospital; died October 22, aged 85, of coronary disease and pneumonia.

George Bernard Topmoeller ⊕ Cincinnati; University of Cincinnati College of Medicine, 1910; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; chief of the medical staffs of St. Mary Hospital and the Good Samaritan Hospital, where he died October 3, aged 59, of gastric ulcer.

Chauncey Vibbard Bunnell Vedder, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1911; died September 9, aged 61, of coronary occlusion.

Homer Wakefield, New York; Bellevue Hospital Medical College, New York, 1891; died September 1, aged 81.

George Albert Weirick ⊕ Elgin, Ill.; Iowa Medical College, Eclectic, Des Moines, 1885; died October 2, aged 84, of myocarditis.

Howard Franklin Wertz, Jackson, Mich.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1901; died in the Mercy Hospital October 1, aged 70, of cerebral hemorrhage.

Walter Puryear Whitted, Gallup, N. M.; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1919; served during World War I; special physician at large for the Indian Service and for many years affiliated with the Navajo Medical Center Hospital and Sanatorium at Fort Defiance, Ariz.; on the staff of St. Mary's Hospital; found dead September 21, aged 53.

Georgetta S. Williams, Marietta, Ohio; Cincinnati College of Medicine and Surgery, 1900; died October 2, aged 84, of cerebral thrombosis.

Alice Stuart Woodman, Boston; Boston University School of Medicine, 1903; served as associate professor of histology and embryology at his alma mater, where she had been a member of the faculty for thirty-eight years; member of the American Association of Anatomists; died September 25, aged 66, of pneumonia.

Henry Herbert Workman, Woodruff, S. C.; Medical College of South Carolina, Charleston, 1905; member of the American Medical Association; died in Charleston October 10, aged 66, of cirrhosis of the liver.

Cletus Kenna Ziegler, Milwaukee; Marquette University School of Medicine, Milwaukee, 1925; died in St. Joseph's Hospital September 13, aged 46, of incarcerated hernia.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 20, 1946.

Proposals of Royal College of Physicians for a Child Health Service

Important proposals for a child health service are made by a committee of the Royal College of Physicians consisting of experts in pediatrics, obstetrics, public health, general medicine and psychiatry, which has just issued its report. While stating that primary responsibility for the health of children must rest with the parents, the health services are regarded as agencies helping them. The general plan of the proposed service is based on close cooperation between the preventive services provided by the local health authorities and the clinical services provided by practitioners and hospitals. The present policy of having two groups of personnel, one engaged in preventive and the other in curative work, is good neither for the child nor for the doctor. A long-term policy should aim at making the general practitioner primarily responsible for the medical care of the child in both the prevention and the cure of disease, since he is the one best fitted to give this service in the home. It is recognized that the medical curriculum does not equip the doctor with sufficient education in pediatrics to specialize in the preventive work of the child welfare and school health service. This can be remedied by postgraduate instruction, which should provide three types of doctors for the preventive work: (1) interested general practitioners with postgraduate experience already, (2) hospital physicians giving some of their time to preventive work in clinics, nurseries and schools and (3) whole time medical officers employed by local authorities, the bulk of whose work will be preventive but who will also be attached to a hospital, to spend, it is suggested, one fifth of their time in curative work. These last are designated as "child health officers" and they form an important element in the proposed scheme.

BEDS FOR CHILDREN

It is estimated that in hospitals, excluding fever hospitals, one seventh of the beds should be for children. The figure required for acute diseases is put at 23,000. For chronic diseases there are a large number, such as orthopedic hospitals, rheumatic heart homes and special residential schools for the blind, deaf, mentally defective and epileptic. The great mass of beds for children are not under the care of physicians trained for children's work. Until more can be trained, the child health medical officers must be brought in. Important recommendations are made for hospital services. All maternity hospitals and departments should have pediatricians on the staff with full responsibility for the care of the newborn. Hospitals for acute diseases should be situated so as to be easily accessible to parents, which means in cities. But hospitals for long-stay patients should be outside cities. Every children's hospital should have an infectious diseases section and every fever hospital should, as far as possible, form part of a general children's hospital.

HEALTH VISITORS

In the past the health visitor has not received sufficient training for work among children. In future, with her work essentially concerned first with antepartum care of mothers and then with supervision of the child to the end of the school age, she should be trained in the course for sick children's nurses and afterward in the first part of the midwife's training, proceeding then to the health visitor's curriculum. Her activities should not be confined to preventive work, for she should give treatment for minor ailments in the health center and also visit children ill at home under the general practitioner. The new academic interest in child health, resulting in university departments of child health, should be the main source of guidance for regional services, with an "Institute of Child Health" as the headquarters for the teaching of preventive pediatrics.

Protein Metabolism in Disease

The presidential address to the Section of Experimental Medicine and Therapeutics of the Royal Society of Medicine was delivered by Professor H. P. Himsworth, who discussed protein metabolism in relation to disease. He said that, although there were only twenty-two amino acids for the construction of all varieties of protein, no two proteins were alike. There were subtle differences between the proteins of the same organs from different animals. In part the tissue differences could be related to differences in the amino acid composition, as also could species difference, such as between human milk and cow's milk, but most species differences were far too subtle for chemical analysis and called for immunologic tests. By altering the amount of dietary the amount of protein might be altered, but not apparently the composition of tissue proteins. Imperfect and unusual proteins seemed never to be produced in the body. Yet the body proteins, far from being stable structures, are in a state of rapid change. Individual amino acids are continually being broken down and the fragments are being built into different or similar amino acids. Yet the tissues retained their characteristic structure, showing that there was a dynamic equilibrium.

Among the conditions which produce excessive utilization of protein are fever and injury. The increased metabolism in fever has been loosely termed toxic destruction, but it occurs after simple injury when there is no question of an extrinsic toxin gaining access to the body. The process seems to be a reaction of the body itself to trauma. From twelve to twenty-four hours after a simple fracture, the nitrogen excretion in the urine begins to rise. It soon reaches a maximum and then slowly returns to normal. It has been suggested that large amounts of amino acid are required for the healing of the injury. Implicit in that suggestion is the idea that certain key amino acids are required and are produced by the breaking down of body protein, and that other amino acids not required by the tissues are rapidly burnt off, accounting for the increased nitrogen excretion. The practical lesson is to remedy any nitrogen deficiency before operation. In acute illness protein intake must be maintained at a reasonable level, but there is no point in pushing it to excess. As soon as the illness begins to improve, protein should be pushed, because this apparently shortens the period of negative nitrogen balance. Those who have followed high protein regimens during convalescence have been impressed by the increased well-being of the patients. As to protein metabolism in relation to liver injury, it seems clear that protein deficiency will lead to liver necrosis. Necrosis produced by lack of cystine is what is called acute yellow atrophy of the liver, and survivors go on to a fibrotic condition of the liver.

A Traveling Professorship

A prominent New Zealand industrialist has made a gift to the Royal College of Surgeons for the endowment of a commonwealth traveling professorship. The endowment will provide about $10,000 a year and will be known as "a gift from a New Zealand family." A commonwealth professor will be appointed each year. Generally he will be a prominent physician, surgeon or scientific worker resident in Britain, Australia or New Zealand. The appointing authorities will also be authorized to elect a distinguished teacher from one of the other dominions. The professor will be required to travel to Britain, Australia and New Zealand or any other dominion of the commonwealth for the purpose of assisting in the advancement of medical science either by lecturing, teaching or engaging in research. The president of the Royal College of Surgeons states that it is hoped that the institution of this professorship will lead to the establishment of closer links between scientific workers in the dominions and the older seats of learning and centers of research.

POSTGRADUATE COURSES FOR VETERAN AND CIVILIAN PHYSICIANS

Compiled by the Council on Medical Education and Hospitals for Period Jan. 1, 1947 to July 15, 1947

(Concluded from page 946)

Medical schools, hospitals, state medical societies and other medical educational institutions and organizations are providing the Council with a growing body of information on courses designed primarily to meet the needs of returning medical officers. These have been incorporated into the lists on these pages They are not specifically designated for veterans, since most if not all of them may also be open to interested civilian physicians Furthermore, all courses listed which were not designed primarily for physician veterans are also open to qualified returning medical officers

Note that each course is listed only once, without cross indexing, so that in some instances a prospective student should look under more than one heading for a desired course

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Postgraduate Courses for Practicing Physicians—Jan 1, 1947 to July 15, 1947—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	OBSTETRICS AND GYNECOLOGY—Continued		
Columbia University, 630 W 168th St, New York 32 At Margaret Hague Maternity Hospital, Jersey City, N J	Obstetrics PM 80	Jan 1, 1947, 3 months	350
	Obstetrics PM 80	April 1, 1947, 3 months	350
	Obstetrics PM 80	July 1, 1947, 3 months	350
	Obstetrics PM 81	1st of every month, 1 month	100
	Observation Course	1st of any month, 1 month, full time	100
At Mount Sinai Hospital	Gynecology PM 30 Recent Advances in Gynecology	April 7–12, 1947, 6 days, full time	40
Columbia University—At New York Postgraduate Medical School, 303 East 20th Street, New York 3	Diagnosis and Office Treatment of Gynecology	Jan 6, 1947, 15 sessions, part time	10
	Diagnosis and Office Treatment of Gynecology	Feb 17, 1947, 15 sessions, part time	10
	Diagnosis and Office Treatment of Gynecology	April 7, 1947, 15 sessions, part time	10
	Diagnosis and Office Treatment of Gynecology	May 19, 1947, 15 sessions, part time	10
	Gynecological Endocrinology	Jan 2, 1947, 21 sessions, part time	100
	Gynecological Endocrinology	March 1, 1947, 21 sessions, part time	100
	Gynecological Endocrinology	May 1, 1947, 21 sessions, part time	100
	Gynecological Pathology [5]	Jan 7–Feb 27, 1947, 8 weeks part time, Tuesday and Thursday afternoons	75
	Seminar in Gynecology	Jan 2–March 3, 1947, 2 months, full time	225
	Seminar in Gynecology	March 3, 1947, 2 months, full time	225
	Seminar in Gynecology	May 1, 1947, 2 months, full time	225
	Surgical Anatomy as Applied to Operative Gynecology [5] (Cadaver)	January–June, 1947, 12 sessions, Tuesday, Thursday, Saturday	200
New York Polyclinic Medical School and Hospital, 341 West 50th Street, New York 19	Clinical and Operative (Cadaver) Gynecology	Arranged, 6 weeks	175
	Obstetrics and Gynecology including Manikin Obstetrics and Cadaver Gynecology	April 1, 1947, 2 months	250
New York University College of Medicine, 477 First Avenue, New York 16	Gynecology	Spring, 1947, 16 weeks, part time	250
At Beth Israel Hospital	Histopathology for Gynecologists	Jan 14, 1947, 5 weeks, part time	50
At Lenox Hill Hospital	Histopathology for Gynecologists	April 21, 1947, 5 weeks, part time	50
Duke University School of Medicine, Durham, N C	Obstetrics and Gynecology	Arranged, 3 months or longer, full time	150 per qtr.
Oklahoma State Health Department, Oklahoma State Medical Association, Oklahoma City At Ada, Okla	Gynecology	Feb 3–April 11, 1947, 10 weeks, 1 evening a week	15 [15]
	Gynecology	April 14–June 27, 1947, 10 weeks, 1 evening a week	15 [15]
At Bartlesville, Okla	Gynecology	Feb 3–April 11, 1947, 10 weeks, 1 evening a week	15 [15]
	Gynecology	April 14–June 27, 1947, 10 weeks, 1 evening a week	15 [15]
At Claremore, Okla	Gynecology	Feb 3–April 11, 1947, 10 weeks, 1 evening a week	15 [15]
	Gynecology	April 14–June 27, 1947, 10 weeks, 1 evening a week	15 [15]

References will be found on page 1033

Postgraduate Courses for Practicing Physicians—Jan. 1, 1947 to July 15, 1947—Continued

OBSTETRICS AND GYNECOLOGY—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
At: Durant, Okla.	Gynecology	Feb. 3 April 11, 1947, 10 weeks, 1 evening a week	15[15]
	Gynecology	April 14-June 27, 1947, 10 weeks, 1 evening a week	15[15]
At: Hugo, Okla.	Gynecology	Feb. 3 April 11, 1947, 10 weeks, 1 evening a week	15[15]
	Gynecology	April 14 June 27, 1947, 10 weeks, 1 evening a week	15[15]
At: Idabel, Okla.	Gynecology	Feb. 3 April 11, 1947, 10 weeks, 1 evening a week	15[15]
	Gynecology	April 14 June 27, 1947, 10 weeks, 1 evening a week	15[15]
At: Miami, Okla.	Gynecology	Feb. 3 April 11, 1947, 10 weeks, 1 evening a week	15[15]
	Gynecology	April 14 June 27, 1947, 10 weeks, 1 evening a week	15[15]
At: Pryor, Okla.	Gynecology	Feb. 3 April 11, 1947, 10 weeks, 1 evening a week	15[15]
	Gynecology	April 14 June 27, 1947, 10 weeks, 1 evening a week	15[15]
At: Sulphur, Okla	Gynecology	Feb. 3 April 11, 1947, 10 weeks, 1 evening a week	15[15]
	Gynecology	April 14-June 27, 1947, 10 weeks, 1 evening a week	15[15]
Oklahoma State Health Department, Oklahoma-State Medical Association, Oklahoma City At: Vinita, Okla.	Gynecology	Feb 3 April 11, 1947, 10 weeks, 1 evening a week	$ 15[15]
	Gynecology	April 14 June 27, 1947, 10 weeks, 1 evening a week	15[15]
University of Oregon Medical School, West Marquam Hill Road, Portland 1, Ore.	Obstetrics	Jan. 27 31, 1947, 5 days, full time	50
	Gynecology	April 28 May 2, 1947, 5 days, full time	50
Tufts Medical School Postgraduate Division, 30 Bennet Street, Boston At: Providence Lying In Hospital and Rhode Island Hospital, Providence, R. I.	Obstetrics and Pediatrics	March, 1947, 1 month, full time	100
	Obstetrics and Pediatrics	June, 1947, 1 month, full time	100
University of Tennessee College of Medicine, 874 Union Ave., Memphis, Tenn.	Postgraduate Course in Anesthesiology and Obstetrics	Jan 1, 1947, 2 weeks (continuously)	150
Meharry Medical College, 1005—18th Ave. North at Heffernan St., Nashville, Tenn.	Obstetrics and Gynecology	Jan 15, 1947 or thereafter 3 months or multiples thereof	125 per qtr.
University of Texas Medical Branch, Galveston, Tex	Refresher Course in Obstetrics and Gynecology	March 17 22, 1947, 1 week	Not given

OPHTHALMOLOGY

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
George Washington University School of Medicine, 1335 H St, N.W., Washington, D. C.	Annual Postgraduate Course in Ocular Surgery, Pathology and Orthoptics	Jan 27 Feb. 1, 1947, 1 week, full time	200
	Ophthalmology	January 27 Feb 8, 1947, 2 weeks	Not given
	Intensive Postgraduate Course in Ophthalmology	Feb. 3-8, 1947, 6 days	50
	The William Thornwall Davis Intensive Postgraduate Course in Ophthalmology	Feb 3 8, 1947, 1 week, full time	50
The Children's Memorial Hospital, 707 Fullerton Ave., Chicago	Postgraduate Conference in Neuromuscular Anomalies of the Eyes[5]	May 1947, 6 days, full time	50
Cook County Graduate School of Medicine, 427 So. Honore Street, Chicago	Clinical Ophthalmology	Every 2 weeks, 2 weeks, full time	50
Northwestern University Medical School, 303 E. Chicago Ave., Chicago	Ophthalmology	Feb. 17 June 16, 1947, 4 months	400
	Basic Study in Ophthalmology	Feb 17 June 16, 1947, 4 months, full time	400[16]
University of Kansas School of Medicine, 39th St and Rainbow Blvd, Kansas City, Kan At: University of Kansas Hospitals	Eye, Ear, Nose and Throat (Intended Primarily for Men in general practice)	March 31 April 4, 1947, 5 days	20[6]
Foundation for Vision, Inc, 520 Commonwealth Avenue, Boston 15 At. Ophthalmological Study Council, Boston 15	Intensive Course in Basic Subjects of Ophthalmology	April 1 June 15, 1947, 11 weeks	280 110 per mo. 80 eve. course
Harvard Medical School, Courses for Graduates, 25 Shattuck Street, Boston	Fundamentals in Refraction	Jan 27 Feb 21, 1947, 4 weeks	Not given
Tufts Medical School Postgraduate Division, 30 Bennet Street, Boston At: Boston Dispensary	Ophthalmoscopy	March 3-29, 1947, 1 mo, half time	50[1]
University of Michigan Medical School, 1313 East Ann St., Ann Arbor, Mich	Ophthalmology	Spring, 1947, 1 week	25
Wayne University Medical College, 1516 St. Antoine St., Detroit	Basic Ophthalmology	Jan. 14, 1947, 1 qtr.	100
University of Minnesota Medical School, Department of Postgraduate Education, Minneapolis 14 At: Center for Continuation Study	Continuation Course in Ophthalmology	Feb. 17 21, 1947, 5 days, full time	25
Washington University School of Medicine, Euclid Avenue and Kingshighway, St. Louis 10	Refresher Course in Ophthalmology	June 9 28, 1947, 3 weeks, full time	150
Columbia University, 630 W. 168th St, New York 32			
At: Montefiore Hospital	Elementary Ophthalmoscopy	Jan. 6 March 3, 1947, 2 months, part time	30
	Perimetry[5]	March 17 May 5, 1947, 7 weeks, part time	25
At: Mount Sinai Hospital	Advanced Course in Ophthalmoscopy	Feb 3 April 21, 1947, 10 weeks, part time	20
Columbia University—At: New York Postgraduate Medical School, 303 East 20th Street, New York 3	Anomalies of the Ocular Muscles[5]	March 17 21, 1947, 5 days, full time	60
	Differential Diagnosis with the Slit Lamp	March 3 7, 1947, 5 days, part time	45
	Motor Anomalies of the Eye[5]	March 10 15, 1947, 6 days, full time	45
	Ophthalmic Neurology[5]	March 3 7, 1947, 5 days, part time	45
	Surgery of the Eye[5]	March 24 29, 1947, 6 days, full time	75
New York Polyclinic Medical School and Hospital, 341 West 50th Street, New York 19	Ophthalmology	Jan, 1947, 6 weeks, part time	50
	Ophthalmology	Jan, 1947 3 months	75
	Ophthalmology, Including Cadaver Ophthalmology and Refraction	Jan, 1947, 3 months, part time	275
	Ophthalmology	April, 1947, 6 weeks	50
	Ophthalmology	April, 1947, 3 months	75
	Ophthalmology, Including Cadaver Ophthalmology and Refraction	April, 1947, 3 months, part time	275
	Refraction	Arranged, 6 weeks, part time	100

References will be found on page 1033,

Postgraduate Courses for Practicing Physicians—Jan. 1, 1947 to July 15, 1947—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	OPHTHALMOLOGY—Continued		
New York University College of Medicine, 477 First Avenue, New York 16 At: New York Eye and Ear Infirmary	Anatomy and Physiology [5]	Each month if 4 or more students 4 weeks, 3 hours each week	50
	Bacteriology, Serology, Immunology [5]	March, 1947, 2 weeks, 6 hours, each week	50
	The Etiology and Surgical Treatment of Detachment of the Retina [5]	Arranged, 4 weeks, 4 hours, each week	75
	External Eye Diseases, Ocular Therapy [5]	Arranged, 1 month, 3 evenings a week	50
	Glaucoma Clinic [5]	Arranged, 8 weeks, 2 hours each week	50
	Histo pathology of the Eye [5]	January-March 1947, 3 months, 1 evening a week	100
	Motor Anomalies [5]	Arranged, 1 month, part time	50
	Neuro-Ophthalmology [5]	Arranged, 1 month, part time	60
	Ocular Muscles [5]	Jan., 1947, 1 month, 3 days a week	50
	Ocular Muscles [5]	April, 1947, 1 month, 3 days a week	50
	Ocular Muscles [5]	June, 1947 1 month, 3 days a week	50
	Operative Eye Surgery (and with Animal Eyes) [5]	Arranged, 1 month, 3 evenings a week	100
	Ophthalmoscopy [5]	Arranged, 1 month, 2 days a week	50
	Perimetry [5]	Arranged, 1 month, 3 days a week	50
	Physiologic Optics [5]	Jan , 1947, 8 weeks, 3 hours each week	100
	Physiologic Optics [5]	April, 1947, 8 weeks, 3 hours each week	100
	Plastic Eye Surgery [5]	Jan., 1947, 4 weeks, 3 days a week	75
	Plastic Eye Surgery [5]	April, 1947, 4 weeks, 3 days a week	75
	Plastic Eye Surgery [5]	June, 1947, 4 weeks, 3 days a week	75
	Refraction [5]	Jan., 1947, 3 months, 3 evenings a week	100
	Refraction [5]	April, 1947, 3 months, 3 evenings a week	100
	Refraction [5]	June, 1947, 3 months, 3 evenings a week	100
	Slit Lamp Microscopy [5]	Jan., 1947, 1 month, 2 days a week	50
	Slit Lamp Microscopy [5]	April, 1947, 1 month, 2 days a week	50
	Slit Lamp Microscopy [5]	June, 1947, 1 month, 2 days a week	50
Duke University School of Medicine, Durham, N. C.	Ophthalmology	Arranged, 3 months or longer, full time	150 per qtr.
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At Wills Eye Hospital	Ophthalmic Histology and Pathology	Arranged, 8 weeks, 96 hours	200
	ORTHOPEDIC SURGERY		
College of Medical Evangelists, 312 North Boyle Avenue, Los Angeles 14 At White Memorial Hospital	General Orthopedic Surgery and Traumatology	Feb. 17, 1947, 6 weeks	$125
Columbia University—At New York Postgraduate Medical School, 303 East 20th Street, New York 3	Functional Anatomy in Relation to Orthopedics	Feb. 17 March 21, 1947, 10 sessions, Monday and Friday, part time	60
	Seminar in Orthopedic Surgery [5]	Jan. 27 Feb. 7, 1947, 10 days, full time	90
	Orthopedics in General Practice	April 28 May 3, 1947, 6 days, full time	50
Duke University School of Medicine, Durham, N. C.	Orthopedic Surgery	Arranged, 3 months or longer, full time	150 per qtr.
University of Oregon Medical School, West Marquam Hill Road, Portland 1, Ore	Orthopedic Surgery	May 19 23, 1947, 5 days, full time	50
	OTOLARYNGOLOGY		
University of Southern California School of Medicine, 3551 University Ave , Los Angeles 7 At: Los Angeles County and Children's Hospitals	Otolaryngology, Course No. 751	Feb. 3, 1947, 12 weeks, full time	250 [1]
Cook County Graduate School of Medicine, 427 So Honore Street, Chicago	Clinical Otolaryngology	Every 2 weeks, 2 weeks, full time	50
University of Illinois College of Medicine, 1853 West Polk Street, Chicago	Refresher Course in Otolaryngology for Specialists [5]	May, 1947, 1 week, full time	50
University of Kansas School of Medicine, 39th St and Rainbow Blvd., Kansas City 3, Kan At: University of Kansas Hospitals	Eye, Ear, Nose and Throat (Intended primarily for men in general practice)	March 31 April 4, 1947, 5 days	20 [6]
Tufts Medical School Postgraduate Division, 30 Bennet Street, Boston At: Boston Dispensary	Otolaryngology	Monthly, 3 or 5 mornings a week	30 for 3 a.m. 50 for 5 a.m.
University of Michigan Medical School, Department of Postgraduate Medicine, 1313 East Ann Street, Ann Arbor, Mich. At: University of Michigan Hospital	Otolaryngology	Spring, 1947, 1 week	25
	Ophthalmology and Otolaryngology [5]	Spring 1947, 6 days, full time	50
Columbia University—At: New York Postgraduate Medical School, 303 East 20th Street, New York 3	Diagnostic Procedures in Otolaryngology	Jan. 2 June 30, 1947, arranged, part time	40 to 60
	Symposium on Otolaryngology [5]	May 12 23, 1947, 2 weeks, full time	90
New York Polyclinic Medical School and Hospital, 341 West 50th Street, New York 19	Clinical Otolaryngology	January 1947, 6 weeks, part time	75
	Clinical Otolaryngology	January 1947, 3 mo., part time	100
	Clinical Otolaryngology	April 1947, 6 weeks, part time	75
	Clinical Otolaryngology	April 1947, 3 mo.	100
	Clinical Otolaryngology and	January 1947, 6 weeks	100
	and	January 1947, 3 mo.	150
	and	April 1947, 6 weeks	100
	and Ophthalmology	April 1947, 3 mo.	150
	Head and Neck Dissection	Arranged, 6 weeks	150
	Ophthalmology and Otolaryngology, including Cadaver Courses and Refraction	January 1947, 3 mo., full time	600
	Ophthalmology and Otolaryngology, including Cadaver Courses and Refraction	April 1947, 3 mo., full time	600

References will be found on page 1033.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1947 to July 15, 1947—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	OTOLARYNGOLOGY—Continued		
Duke University School of Medicine, Durham, N. C.	Otolaryngology	Arranged, 3 mo. or longer, full time	150 per qtr.
University of Cincinnati College of Medicine, Eden and Bethesda Aves., Cincinnati	Graduate Operative Course in Otolaryngology	April 14-20, 1947, 6 days	100
University of Oregon Medical School, West Marquam Hill Road, Portland 1, Ore.	Ophthalmology and Otolaryngology	April 7-12, 1947, 6 days, full time	50
Temple University School of Medicine, 3400 N. Broad St., Philadelphia	Laryngology and Broncho-Esophagology	Arranged, probably February 1947, 2 weeks, 60 hours	250
	Laryngology and Broncho-Esophagology	Arranged, probably April 1947, 2 weeks, 60 hours.	250
Gill Memorial Eye, Ear and Throat Hospital, Roanoke, Va.	Annual Spring Graduate Course	April 7-12, 1947, 1 week	50
	OTOLOGY		
New York Polyclinic Medical School and Hospital, 341 West 50th Street, New York 19	Advanced Otology	Arranged	82.50
New York University College of Medicine, 477 First Avenue, New York 16 At: New York Eye and Ear Infirmary	Anatomy and Physiology [5]	Each month if 4 or more students, 4 weeks, 3 hours each week	50
	Anatomy of the Ear [5]	Each month if 4 or more students, 1 mo., part time	50
	Bacteriology, Serology, Immunology [5]	March 1947, 2 weeks, 6 hours each week	50
	Clinical Otology [5]	Arranged, 4 weeks, 4 hours each week	75
	Operative Ear Surgery [5]	Each month if 4 or more students, 1 mo., part time	200
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At: Anatomical Laboratory	Otologic Operations (Cadaver)	Arranged, 2 weeks, 20 hours	100
	OTORHINOLARYNGOLOGY		
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At: Anatomical Laboratory	Rhinolaryngologic Operations (Cadaver)	Arranged, 10 days, 20 hours	150
	PATHOLOGY		
Cook County Graduate School of Medicine, 427 So. Honore Street, Chicago	2 Weeks Surgical Pathology	January-July 1947, every 2 weeks, 2 weeks, full time	150
	1 Month Course, Surgical Pathology	January-July 1947, every mo., 1 mo., full time	250
University of Maryland School of Medicine, Lombard and Greene Sts., Baltimore	Basic Training and General Pathology	Jan. 15-July 1, 1947, 5½ mo.	200
	Review of Pathology	Jan. 15-July 1, 1947, 5½ mo.	150
	Training in General Pathology as Part of Preparation for Certification in Surgery	Jan 15-July 1, 1947, 6 mo.	150
	Neuropathology	Jan. 15 July 1, 1947, 6 mo., full time	200 [17]
Creighton University School of Medicine, 306 North 14th Street, Omaha	Clinical Pathological Conference	Arranged, 3 mo.	None
	Medical and Surgical Pathological Conferences	Arranged, 3 mo.	None
	[illegible]	Arranged, 2 weeks	None
	[illegible] Con[illegible]	Arranged, 3 mo.	None
	Senior Pathological Conference	Arranged, 3 mo.	None
	Surgical Pathology	Arranged, 1 or 2 weeks	None
Columbia University, 630 W. 168th St., New York 32	Pathology	1st of any month, 2-6 mo.	55 per mo.
	Surgical Pathology	1st of any month, 2-6 mo.	65 per mo.
At: Mount Sinai Hospital	Surgical Pathology	Feb. 8-May 24, 1947, 15 weeks, part time	100
Columbia University—At: New York Postgraduate Medical School, 303 East 20th Street, New York 3	Gross and Microscopic Pathology	April 21-May 28, 1947, 6 weeks, part time, Mon. and Fri., 2-5 p. m.	75
	Pathology of the Blood and Blood-Forming Organs	March 3-28, 1947, 4 weeks, part time	75 [5]
New York Medical College, Flower and Fifth Avenue Hospitals, 1 East 105th Street, New York	Clinical Pathology	Arranged, 26 hours, part time	100
	Pathology	Arranged, 16 weeks, half time	200
New York Polyclinic Medical School and Hospital, 341 West 50th Street, New York 19	Practical Laboratory Instruction in Pathology and Bacteriology	Arranged	Arranged
New York University College of Medicine, 477 First Avenue, New York	Pathology (Surgical)	Jan. 6, 1947, 12 weeks, part time	175 vets. 200 non-vets.
At: Bellevue Hospital	Radiation Pathology	Spring 1947, 16 weeks, part time	75 vets. 90 non-vets.
University of North Carolina School of Medicine, Chapel Hill, N. C.	Pathology	Arranged	25
Duke University School of Medicine, Durham, N. C.	Gross and Microscopic Conferences on Surgical Pathology	Arranged, 3 mo. or longer, full time	150 per qtr.
	Pathology	Arranged, 3 mo. or longer, full time	150 per qtr.
	Pathological Research	Arranged, 3 mo. or longer, full time	150 per qtr.
	Staff Appointments in Pathology	Arranged, 3 mo. or longer, full time	150 per qtr.
	Systematic Review of General and Surgical Pathology	Arranged, 3 mo. or longer, full time	150 per qtr.
Meharry Medical College, 1005 18th Avenue, Nashville, Tenn.	General Pathology	Jan. 15, 1947, or thereafter, 3 mo. or multiples thereof	125 per qtr.
University of Texas Medical Branch, 912 Ave. B, Galveston, Tex.	Surgical Pathology	By arrangement	Not given
	PEDIATRICS		
Colorado State Medical Society, Republic Building, Denver At: Shirley Savoy Hotel	Pediatrics	Feb. 19-21, 1947, not definite	5 regis.
George Washington University School of Medicine, 1335 H St., N.W., Washington, D. C.	Intensive Postgraduate Course in Pediatrics	Feb. 24-March 14, 1947, 3 weeks, full time	150
	Pediatrics	March 3-14, 1947, 2 weeks	Not given
Emory University Medical School, 50 Armstrong Street, Atlanta, Ga. At: Grady Memorial Hospital and Emory University Hospital	Pediatrics	Arranged, 2 weeks-3 mo., or longer	125 per qtr. 12 per wk.

References will be found on page 1033.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1947 to July 15, 1947—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	PEDIATRICS—Continued		
Cook County Graduate School of Medicine, 427 So. Honore Street, Chicago	Clinical Course in Pediatrics	1st and 3rd Mon. of each mo., except April 1947, 2 weeks, full time	60
	Clinical Course in Pediatrics	1st and 3rd Mon. of each mo., except April 1947, 1 mo., full time	100
	4 Weeks Formal Course in Pediatrics	April 7, 1947, 4 weeks, full time	150
University of Kansas School of Medicine, 39th Street and Rainbow Blvd., Kansas City 3, Kan. At: University of Kansas Hospitals	Pediatrics and Public Health	Feb. 24-28, 1947, 5 days	20[6]
Mississippi State Board of Health, Jackson, Miss. At: Tulane University	Pediatrics	March 3-7, 1947, 5 days	25[18]
Tufts Medical School, Postgraduate Division, 30 Bennet Street, Boston 11 At: Boston Dispensary, Boston Floating Hospital	Pediatrics	As demand arises, 1 week, full time	50
At: 20 Arch Street, Boston	Pediatrics	March 31-April 12, 1947, 2 weeks, full time	75[1]
University of Michigan Medical School, Ann Arbor, Mich.	Pediatrics, New Developments in Pediatric Practice	Spring 1947, 3 days	15
University of Minnesota Medical School, Minneapolis 14 At: Center for Continuation Study	Pediatrics	To be announced, 3 days	15
	Pediatrics	To be announced, 6 days	25
	Pediatrics	To be announced, 12 days	50
Long Island College of Medicine, Joint Committee on Postgraduate Education, 1313 Bedford Avenue, Brooklyn 2 At: Jewish Hospital	Child Psychiatry	April 17, 1947, 12 sessions, once a week	20
At: Kings County Hospital	Heart Disease in Childhood	April 11, 1947, 10 sessions, once a week	20
University of Buffalo Medical School, 24 High Street, Buffalo	Pediatrics	January 1947, 2 weeks	Not given
Columbia University, 630 West 168th Street., New York 32 At: Mount Sinai Hospital	Clinical Pediatrics	Feb. 4-April 18, 1947, 11 weeks, part time	65
At: New York Postgraduate Medical School, 303 East 20th Street, New York 3	Clinical Pediatrics	Jan. 6, 1947, 4 weeks, full time	125
	Clinical Pediatrics	March 3, 1947, 4 weeks, full time	125
	Clinical Pediatrics	May 5, 1947, 4 weeks, full time	125
	Neurology and Psychiatry for Pediatricians[5]	April 21-May 3, 1947, 2 weeks, full time	75
	Practical Clinical Pediatrics	Feb. 3, 1947, 4 weeks, full time	100
	Practical Clinical Pediatrics	April 1, 1947, 4 weeks, full time	100
	Practical Clinical Pediatrics	June 2, 1947, 4 weeks, full time	100
	Symposium on Recent Advances in Pediatrics	Feb. 10, 1947, 6 days, full time	50
	Symposium on Recent Advances in Pediatrics	April 14, 1947, 6 days, full time	50
	Symposium on Recent Advances in Pediatrics	June 9, 1947, 6 days, full time	50
New York Polyclinic Medical School and Hospital, 341 West 50th Street, New York 19	Pediatrics	Arranged, 4 weeks, part time	60
New York University College of Medicine, 477 First Avenue, New York 16 At: Lenox Hill Hospital	Pediatrics	Winter 1947, 8 weeks, Tuesday and Friday afternoons	50
Duke University School of Medicine, Durham, N. C.	Pediatrics	Arranged, 3 mo. or longer, full time	150 per qtr.
Southern Pediatric Seminar At: Saluda, N. C.	Postgraduate Course in Pediatrics	Last 2 weeks in July 1947, 2 weeks, 6 hours a day	25
University of Cincinnati College of Medicine, Eden and Bethesda Aves., Cincinnati	Refresher Course in Pediatrics	July 15, 1947, 2 mo., full time	30 per mo.
University of Oregon Medical School, West Marquam Hill Road, Portland 1, Ore.	Pediatrics	Feb. 10-14, 1947, 5 days, full time	50
Tufts Medical School, Postgraduate Division, 30 Bennet Street, Boston 11	Obstetrics and Pediatrics	March 1947, 1 mo., full time	100
At [illegible] Hospital and Rhode Island I.	Obstetrics and Pediatrics	June 1947, 1 mo., full time	100
Mehar [illegible] 18th Avenue, Nashville, Tenn.	Pediatrics	Jan. 15-29, 1947, 2 weeks, full time	35
Unive [illegible] Branch, 912 Avenue B, Galveston, Tex.	Spring Conference in Pediatrics	March 31-April 5, 1947, 1 week	Not given
University of Wisconsin Medical School, 418 North Randall Street, Madison 6, Wis.	Observation Course in Pediatrics	April 1947, 5 days, full time	25
	PHARMACOLOGY		
University of North Carolina School of Medicine, Chapel Hill, N. C.	Pharmacology	Arranged	25
Duke University School of Medicine, Durham, N. C.	Pharmacology	Arranged, 3 mo. or longer, full time	150 per qtr.
	Recent Advances in Pharmacology	Arranged, 10-12 weekly seminars, part time	150 per qtr.
	PHYSICAL MEDICINE		
Northwestern University Medical School, 303 East Chicago Avenue, Chicago	Physical Medicine	Arranged, 3 mo.	166.66
University of Kansas School of Medicine, 39th Street and Rainbow Boulevard, Kansas City 3, Kan. At: University of Kansas Hospitals	Physical Medicine	Jan. 13-17, 1947, 5 days	20[6]
New York Polyclinic Medical School and Hospital, 341 West 50th Street, New York 19	Physical Medicine	Arranged, 4 weeks	100
New York University College of Medicine, 477 First Avenue, New York At: Bellevue Hospital and Institute for Crippled and Disabled	Physical Medicine	Spring 1947, 3 mo. daily, part time	200
University of Texas Medical Branch, 912 Avenue B, Galveston, Tex.	Physical Medicine	March 3-7, 1947, 5 days	Not given
	PHYSIOLOGY		
Columbia University, 630 West 168th Street, New York 32 At: Mount Sinai Hospital	[illegible] of Water and Elec-	March 31-April 22, 1947, 3 weeks, part time	30
	[illegible]	Jan. 8-Feb. 26, 1947, 2 mo., part time, Wednesdays	30
Columbia University—At: New York Post-graduate Medical School, 303 East 20th Street, New York 3	[illegible] ical Aspects		
	Normal and Pathological Physiology, Functional and Chemical Aspects	March 3-14, 1947, 10 days, full time	75

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Postgraduate Courses for Practicing Physicians—Jan 1, 1947 to July 15, 1947—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	PHYSIOLOGY—Continued		
New York University College of Medicine, 477 First Avenue, New York	Physiology	March 3, 1947, 16 weeks, Thursday and Friday afternoons, 2 5 p m.	65 vets 75 non vets.
University of North Carolina School of Medicine, Chapel Hill, N C.	Physiology	Arranged	25
Duke University School of Medicine, Durham, N C	Physiology	Arranged, 3 mo or longer, full time	150 per qtr
	Recent Advances in Physiology	Arranged, 10 12 weekly seminars, *part time*	150 per qtr
	PRECEPTORSHIP		
Creighton University School of Medicine, 306 North 14th Street, Omaha	Preceptorship	Arranged 3 mo.	None
	PROCTOLOGY		
College of Medical Evangelists, 312 North Boyle Avenue, Los Angeles 33 At White Memorial Hospital	Proctology	Jan 9 March 13, 1947, 10 weeks, 1 day a week for 2 hours	35
Maine Medical Association, 177c Main Street, Waterville, Me At Boston, Mass	Proctology	Arranged, 1 2 weeks	None[2]
Tufts Medical School, Postgraduate Division, 30 Bennet Street, Boston 11 At Pratt Diagnostic Hospital, Boston Dispensary	Proctology I	April 28 May 2, 1947, 1 week, full time	40
	Proctology III	May 12 June 7, 1947, 1 mo, part time	100
Long Island College of Medicine, Joint Committee on Postgraduate Education, 1313 Bedford Avenue, Brooklyn 2	Proctology	April 14, 1947	25
New York Polyclinic Medical School and Hospital, 341 West 50th Street, New York 19	Proctology	January 1947, 6 weeks, part time	75
	Proctology, Gastroenterology, Operative Proctology	January 1947, 6 weeks	200
	Proctology	April 1947, 6 weeks, part time	75
	Proctology, Gastroenterology, Operative Proctology (Cadaver)	April 1947, 6 weeks	200
New York University College of Medicine, 477 First Avenue, New York At *Proctologic Clinic of N Y U and Bellevue Hospital*	Proctology	Spring 1947, 8 weeks, 5 days a week, 10 12 a. m	100
	PUBLIC HEALTH		
University of Kansas School of Medicine, 39th Street and Rainbow Boulevard Kansas City 3, Kan At University of Kansas Hospitals	Pediatrics and Public Health	Feb 24 25, 1947, 5 days	20[6]
University of Michigan School of Public Health, 109 South Observatory Street, Ann Arbor, Mich	Public Health	Feb 10, 1947, 16 weeks, full time	100 res 175 non res
	Public Health Administration	Feb 10, 1947, 16 weeks, full time	100 res 175 non res
New York State Department of Health At Albany Medical College, 47 New Scotland Avenue Albany, N Y	Extension Course for Grade II Health Officers (Correspondence)	Continuous, enter any time	40
University of North Carolina Chapel Hill, N C At *University of N C, School of Public Health*	Public Health	June August 1947, 3 mo	100 per qtr.
	RADIOLOGY		
College of Medical Evangelists, 312 North Boyle Avenue Los Angeles 33 At White Memorial Hospital	Roentgenology	Jan 10, 1947, 12 periods, 1 morning each week	35
	Roentgenology	April 4 June 13, 1947, 12 periods, 1 morning, each week	25
Colorado State Medical Society, Republic Building, Denver At Shirley Savoy Hotel	Radio Physicist	Feb 19 21, 1947, not definite	5 regis fee
American College of Radiology, 20 N Wacker Drive, Chicago At Medical Schools	Special Courses	Varied	Varied
Cook County Graduate School of Medicine, 427 So Honore Street, Chicago	Lecture and Clinical Roentgenology Course #1	1st Monday of every month, 2 weeks, full time	125
	Clinical Roentgenology Course #2	3rd Monday of every month, 2 weeks, full time	70
University of Kansas School of Medicine, 39th Street and Rainbow Boulevard, Kansas City 3, Kan At University of Kansas Hospitals	Radiology and Cancer	June 9 13, 1947, 5 days	20[6]
Maine Medical Association, 177c Main Street, Waterville, Me At Boston, Mass	Roentgenology	Arranged, 1 2 weeks	None[2]
Harvard University Medical School, 25 Shattuck Street, Boston, Mass At Peter Bent Brigham Hospital	General Radiology	Monthly, 1 mo	100
At *Massachusetts General Hospital*	*General Radiology*	*January June 1947, 1 mo*	100
Tufts Medical School, Postgraduate Division, 30 Bennet Street, Boston 11 At Pratt Diagnostic Hospital	Radiology II	April 21 25, 1947, 4 days	40
	Radiology I	Feb 3 March 1, 1947, 1 mo full time	40
University of Michigan Medical School, 1313 East Ann Street, Ann Arbor, Mich	Diagnostic Roentgenology	Spring 1947, 1 week	30
University of Minnesota Medical School, Minneapolis 14 At Center for Continuation Study	Radiology	To be announced, 3 days	15
	Radiology	To be announced, 6 days	25
	Radiology	To be announced, 12 days	50
Creighton University School of Medicine, 306 North 14th Street, Omaha, Neb	Radiology	Arranged, 3 mo	None
Long Island College of Medicine Joint Committee on Postgraduate Education, 1313 Bedford Avenue, Brooklyn 2 At Jewish Hospital	Cardiovascular Roentgenology	April 1947, 8 sessions, once weekly, part time	20
Columbia University, 630 West 168th Street, New York 32 At Columbia Presbyterian Medical Center	Radiological Physics	March 5 April 25 1947, 8 weeks, part time Wed and Fri, 5 6	25
At Affiliated Hospitals	Symposium on Diagnostic Radiology	March 3 May 9 1947, 2 mo, full time	250
New York Medical College, Flower and Fifth Avenue Hospitals, 1 East 105th Street, New York	Diagnostic Roentgenology	Arranged, part time	150
	Radium and Roentgen Therapy	Arranged, part time	150
New York Polyclinic Medical School and Hospital, 341 West 50th Street New York 19	Radiology	January 1947, 3 mo	300
	Radiology	April 1947, 3 mo	300
New York University College of Medicine, 477 First Avenue, New York At Beth Israel Hospital	Roentgenology	Jan 7, 1947, 8 weeks Tuesdays and Thursdays, 2-4	50
At N Y U College of Medicine and City Hospital	Radiology	Jan 20, 1947, 12 weeks, part time	100
Duke University School of Medicine, Durham, N C	Radiology	Arranged 3 mo or longer, full time	150 per qtr
American College of Radiology, 20 North Wacker Drive, Chicago 6 At Cleveland	Postgraduate Course in Radiology	February 1947, 1 week	50

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Postgraduate Courses for Practicing Physicians—Jan. 1, 1947 to July 15, 1947—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	RADIOLOGY—Continued		
University of Oregon Medical School, West Marquam Hill Road, Portland 1, Ore.	Radiology	May 5 9, 1947, 5 days, full time	50
American College of Radiology, 20 North Wacker Drive, Chicago 6 At: Philadelphia County Medical Society Building	Postgraduate Course in Radiology [5]	March 30 April 5, 1947, 1 week	50
Meharry Medical College, 1005 18th Ave., Nashville, Tenn.	Radiology	Jan. 15, 1947, or thereafter, 3 mo. or multiples thereof	125 per qtr.
	SURGERY		
University of Alabama School of Medicine, University, Ala	Surgery	April 1947, 1 week	None
University of Southern California Division of Graduate Medicine, 3551 University Avenue, Los Angeles 7 At. Los Angeles County Hospital	Recent Surgical Advances, Course No 756	May 14, 1947, 12 evening lectures, 1 evening weekly	50 [3]
Colorado State Medical Society, Republic Building, Denver At: Shirley Savoy Hotel	Surgery	Feb. 19 21, 1947	5 regis.
George Washington University School of Medicine, 1335 H Street, N W , Washington 5, D C.	Intensive Postgraduate Course in Surgery	Feb. 10 March 14, 1947, 5 weeks, full time	250
	Intensive Refresher Course in General Surgery	Feb 17 21, 1947, 1 week, full time	50
Cook County Graduate School of Medicine, 427 So Honore Street, Chicago	Clinical Surgery	Feb. 17, 1947, 2 weeks, full time	85
	Clinical Surgery	March 17, 1947, 2 weeks, full time	85
	Clinical Surgery	April 14, 1947, 2 weeks, full time	85
	Clinical Surgery	May 12, 1947, 2 weeks, full time	85
	Clinical Surgery	June 9, 1947, 2 weeks, full time	85
	Gall Bladder Surgery	April 14, 1947, 1 week, full time	100
	Gall Bladder Surgery	June 2, 1947, 1 week, full time	100
	General Surgery	Feb. 3, 1947, 4 weeks, full time	300
	General Surgery	March 3, 1947, 4 weeks, full time	300
	General Surgery	March 31, 1947, 4 weeks, full time	300
	General Surgery	April 28, 1947, 4 weeks, full time	300
	General Surgery	May 26, 1947, 4 weeks, full time	300
	General Surgery	July 7, 1947, 4 weeks, full time	300
	Surgery of the Colon and Rectum	March 10, 1947, 1 week, full time	100
	Surgery of the Colon and Rectum	April 7, 1947, 1 week, full time	100
	Surgery of the Colon and Rectum	May 5, 1947, 1 week, full time	100
	Surgery of the Colon and Rectum	June 2, 1947, 1 week, full time	100
	Surgical Diagnosis, Postoperative and Preoperative Care	To be announced, 10 weeks, 1 day each week	100
	Surgical Technique with Practice	To be announced, 10 weeks, part time	200
	Surgical Technique	Jan. 20, 1947, 2 weeks, full time	200
	Surgical Technique	Feb. 17, 1947, 2 weeks, full time	200
	Surgical Technique	March 17, 1947, 2 weeks, full time	200
	Surgical Technique	April 14, 1947, 2 weeks, full time	200
	Surgical Technique	May 12, 1947, 2 weeks, full time	200
	Surgical Technique	June 9, 1947, 2 weeks, full time	200
	Thoracic Surgery	To be announced, 1 week	100
	Thoracic Surgery	To be announced, 1 mo	300
	Vaginal Approach to Pelvic Surgery	March 10, 1947, 1 week, full time	100
	Vaginal Approach to Pelvic Surgery	April 7, 1947, 1 week, full time	100
	Vaginal Approach to Pelvic Surgery	May 5, 1947, 1 week, full time	100
	Vaginal Approach to Pelvic Surgery	June 9, 1947, 1 week, full time	100
University of Kansas School of Medicine, 39th Street and Rainbow Boulevard, Kansas City 3, Kan At University of Kansas Hospitals	Surgery	May 12 16, 1947, 5 days	20 [6]
Tulane University of Louisiana School of Medicine, 1430 Tulane Avenue, New Orleans 13	Neoplastic Diseases	April 7 12, 1947, 5½ days, full time	25
	Traumatic and Emergency Surgery	Jan 6 11, 1947, 5½ days, full time	25
Tufts Medical School Postgraduate Division, 30 Bennet Street, Boston At Pratt Diagnostic Hospital	Principles of Surgical Technique	March 3 April 25, 1947, 8 weeks, 3 days a week	200 [1]
	Surgery	Feb. 3 March 1, 1947, 1 month, full time	100
	Surgery	May 5-31, 1947, 1 month, full time	100
	Surgical Anatomy	Not given, 8 weeks, 3 days a week	200 [1]
University of Minnesota Medical School, Department of Postgraduate Education, Minneapolis 14 At Center for Continuation Study	Surgery	To be announced, 3 days	15
	Surgery	To be announced, 6 days	25
	Surgery	To be announced, 12 days	50
Columbia University, 630 West 168th Street, New York 32 At. Affiliated Hospitals	Symposium on General Surgery	May 12 16, 1947, 5 days, full time	50
At. Mount Sinai Hospital	Surgery of the Gastro Intestinal Tract [5]	Jan. 6 31, 1947, 4 weeks, full time	150
	Surgery of the Gastro Intestinal Tract [5]	April 21 May 16, 1947, 4 weeks, full time	150
Columbia University—At: New York Postgraduate Medical School, 303 East 20th Street, New York 3	Basic Course in Traumatic Surgery [5]	Jan 13 Feb. 21, 1947, 6 weeks, full time	200
	Diagnosis and Treatment of Trauma	May 19 24, 1947, 6 days, full time	50
	Dissection and Surgical Anatomy [5]	Arranged, 12 sessions, part time	150
	Review of General Surgery for Surgeons [5]	April 7 May 2, 1947, 4 weeks, full time	125
	Seminar in Traumatic Surgery	March 3 15, 1947, 2 weeks, full time	90
	Surgical Anatomy as Applied to Colon and Rectal Surgery (Cadaver) [5]	Arranged, 6 sessions, part time	100
	Surgical Anatomy as Applied to General Surgery (Cadaver) [5]	Arranged, 12 sessions, part time	200
	Surgical Anatomy as Applied to Thoracic Surgery [5]	Arranged, 12 sessions, part time	200
	Surgical Pathology [5]	March 4 June 12, 1947, 15 weeks, part time, Tuesday and Thursday	150
New York Medical College, Flower and Fifth Avenue Hospitals, 1 East 105th Street, New York	Gastrointestinal Surgery	Arranged, 1 month	200
	Surgical Aspects of Peripheral Vascular Diseases	Arranged, 1 month	200
	Thoracic Surgery	Spring, 1947, 3 weeks	325

References will be found on page 1033.

Postgraduate Courses for Practicing Physicians—Jan. 1, 1947 to July 15, 1947—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	SURGERY—Continued		
New York Polyclinic Medical School and Hospital, 341 West 50th Street, New York	Clinical and Operative (Cadaver) Surgery	Arranged, 6 weeks, full time	200
	Clinical Surgery	Jan., 1947, 6 weeks	100
	Clinical Surgery	April, 1947, 6 weeks	100
	Combined Surgical Course Including Cadaver Surgery and Gynecology	Jan., 1947, 3 months	250
	Combined Surgical Course Including Cadaver Surgery and Gynecology	April, 1947, 3 months	250
New York University College of Medicine, 477 First Avenue, New York At: Lenox Hill Hospital	Histopathology for Surgeons	Jan. 13, 1947, 5 weeks, part time	50
	Histopathology for Surgeons	April 28, 1947, 5 weeks, part time	50
	Recent Advances in Thoracic Surgery [5]	March, 1947, 1 month, full time	250
At: Triboro Hospital	Recent Advances in Thoracic Surgery [5]	March, 1947	250
Duke University School of Medicine, Durham, N. C.	Surgery	Arranged, 3 months or longer, full time	150 per qtr.
County Medical Association, 3400 North Eastern, Oklahoma City—At: Altus, Okla.	Surgical Diagnosis	Jan.-June, 1947, 10 weeks, 3 hours a week	9 [19]
At: Alva, Okla.	Surgical Diagnosis	Jan.-June, 1947, 10 weeks, 3 hours a week	9 [19]
At: Ardmore, Okla.	Surgical Diagnosis	Jan.-June, 1947, 10 weeks, 3 hours a week	9 [19]
At: Duncan, Okla.	Surgical Diagnosis	Jan.-June, 1947, 10 weeks, 3 hours a week	9 [19]
At: Enid, Okla.	Surgical Diagnosis	Jan.-June, 1947, 10 weeks, 3 hours a week	9 [19]
At: Guymon, Okla.	Surgical Diagnosis	Jan.-June, 1947, 10 weeks, 3 hours a week	9 [19]
At: Lawton, Okla.	Surgical Diagnosis	Jan.-June, 1947, 10 weeks, 3 hours a week	9 [19]
At: Watonga, Okla.	Surgical Diagnosis	Jan.-June, 1947, 10 weeks, 3 hours a week	9 [19]
At: Woodward, Okla.	Surgical Diagnosis	Jan.-June, 1947, 10 weeks, 3 hours a week	9 [19]
University of Oregon Medical School, West Marquam Hill Road, Portland 1	General Surgery	March 3-7, 1947, 10 weeks, 3 hours a week	9 [19]
University of Vermont College of Medicine, Pearl Street, College Park, Burlington, Vt.	Course in Surgery	Throughout year, 4 weeks, 3-5 hours daily (minimum)	750 per yr. [15]
	THERAPY		
College of Medical Evangelists, 312 N. Boyle Avenue, Los Angeles 33 At: White Memorial Hospital	Physical Therapy	Feb. 6, 1947, 10 weeks, 10 hours (1 hour each week)	30
Cook County Graduate School of Medicine, 427 So. Honore Street, Chicago	X-Ray Therapy	Every 2 weeks, 2 weeks, full time	110
	X-Ray Therapy	Every 2 weeks, 3 months, full time	300
University of Michigan Medical School, Department of Postgraduate Medicine, 1313 East Ann Street, Ann Arbor, Mich.	Recent Advances in Therapeutics	Spring, 1947, 3 days	15
Long Island College of Medicine, Joint Committee on Postgraduate Education, 1313 Bedford Avenue, Brooklyn 2	Biologic Fundamentals of Radiation Therapy	April 8, 1947, 10 sessions, once a week, evenings	20
New York University College of Medicine, 477 First Avenue, New York At: Bellevue Hospital	Radiation Therapy	Feb. 3-March 28, 1947, 8 weeks, part time	175 non-vets.[6] 125 vets.
	Refresher Course in Radiation Therapy	March 31-May 23, 1947, 8 weeks, part time	175 non-vets.[6] 125 vets.
	Radiation Therapy	July 1, 1947, 52 weeks, full time	600 non-vets.[6] 500 vets.
	TROPICAL MEDICINE		
Tulane University of Louisiana School of Medicine, 1430 Tulane Avenue, New Orleans 13	Tropical Medicine and Medical Parasitology	Jan. 6-May 24, 1947, 5 months	300
Columbia University—At: New York Postgraduate Medical School, 303 East 20th Street, New York 3	Clinical Tropical Medicine and Parasitology	June 2-6, 1947, 5 days, full time	45
	UROLOGY		
College of Medical Evangelists, 312 N. Boyle Avenue, Los Angeles 33 At: White Memorial Hospital	General Urology	Jan. 6, 1947, 10 periods; 1 morning each week	35
Tulane University of Louisiana School of Medicine, 1430 Tulane Avenue, New Orleans 13	Urinary Disease	March 10-15, 1947, 5½ days, full time	25
Tufts Medical School Postgraduate Division, 30 Bennet Street, Boston At: Boston Dispensary and Pratt Diagnostic Hospital	Urology	Feb 10-15, 1947, 1 week, full time	40 [1]
Columbia University—At: New York Postgraduate Medical School, 303 East 20th Street, New York 3	Advanced Course in Urology for Specialists [5]	Feb. 3-March 29, 1947, 2 months, full time	225
Long Island College of Medicine, Joint Committee on Postgraduate Education, 1313 Bedford St., Brooklyn 2 At: Long Island College Hospital	Urology	First of each month, 1 month or longer, part time	25 per mo.
New York Hospital, 525 East 68th Street, New York At: Brady Foundation for Urology and New York Hospital	Postgraduate Course in Urology	Jan. 1-July 1, 1947, 6 months, 33 hours a week	500 in advance
	Postgraduate Course in Urology	July 1, 1947-Jan. 1, 1948, 6 months, 33 hours per week	500 in advance
New York University College of Medicine, 477 First Avenue, New York At: Beth Israel Hospital	Clinical Urology	Jan. 6, 1947, 6 weeks, part time	100
Duke University School of Medicine, Durham, N. C.	Urology	Arranged, 3 months or longer, full time	150 per qtr.
	VENEREAL DISEASES		
Bureau of Social Hygiene, City of New York, Department of Health, 125 Worth Street, New York At: Central Clinic	Practical Course in Daignosis, Treatment and Control of Venereal Diseases [6]	Every 2 weeks, 2 weeks	None
	Seminar in Diagnosis and Treatment of Venereal Diseases (Lectures)	Spring, 1947, 14 sessions	None
Harvard University Medical School, Courses for Graduates, 25 Shattuck Street, Boston At: Harvard University School of Public Health	Public Health Practice, Venereal Disease Control	April 7-May 24, 1947, 7 weeks, part time, 3 mornings a week	36.25

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1. Plus $5.00 registration fee.
2. Stipend provided when needed.
5. Specialists only.
6. No fee to World War II veterans.
15. Interns free.
16. Veterans only.
17. Plus $10.00 laboratory fee.
18. Paid by State Board of Health.
19. Service men no charge.

Correspondence

PSYCHIATRY IN WORLD WAR II

To the Editor:—The communication "Psychiatry in World War II" by Dr. Amos R. Koontz recalls some of the problems I encountered during my military experience from 1940 to 1946. From 1942 to 1945 I was the senior medical officer of the Chicago Induction Station, which was one of the largest in the country and was used as a yardstick for all induction stations. With this background I feel qualified to express my views on induction work.

I am in agreement with Dr. Koontz on the inadequacies of neuropsychiatric examination at induction stations, particularly during the early part of the emergency. The criteria for neuropsychiatric selection were abstract; the information obtained from selectees was in many cases erroneous; there were not enough neuropsychiatrists available; there was not enough time to do a complete neuropsychiatric examination and keep up with the flow of men.

After Feb. 1, 1944 neuropsychiatric examinations at the Chicago Induction Station took on a different form. By this time the neuropsychiatric department had a clear and definite point of view in regard to what was needed. It reduced the number of psychiatrists and approached the number available. The selectees were handled with dispatch and with a reasonable degree of accuracy.

In the period under discussion approximately 2,200 selectees were being examined daily. If one were to follow the existing army regulations, 44 neuropsychiatrists would be needed and they would have to spend approximately eight hours daily doing their part of the examinations. It may be surprising to know that the largest group of neuropsychiatrists mustered on any given day was 21 to 26 and that not without difficulty. Even to obtain this number it was necessary for me to make telephone calls, write letters and make personal appeals. This was a little short of the 44. However, with the new system the 21 to 26 men available were more than adequate.

The new system came into being when the state Selective Service instituted the Medical Survey Form Program. These forms became an integral part of the neuropsychiatric examination and introduced greater accuracy into our decisions.

There were a number of forms: One made out by the registrant at the time of registration which indicated any illness that the selectee may have had in the past, and the name of his attending physician or physicians. A second form to be filled out by the attending physician to verify the statements made by the selectee. A third form filled out by the school which the selectee had attended. Also an additional form available on which social service work was indicated.

The neuropsychiatric adjunct test also was used. This was a form which asked questions commonly used by the neuropsychiatrist. Each answer was given a score. A low or high score meant further neuropsychiatric examination.

Each physician in the examining line was expected to record any abnormal behavior of the selectee for the attention of the neuropsychiatrist.

With the available information at hand the system functioned as follows: The medical surveys were usually sent to the induction station on the day previous to the arrival of the selectee and were examined by a group of neuropsychiatrists in order to check for any pertinent information. All surveys were identified by the same number that the selectee would have on the following day.

On the day of the examination specially trained and qualified neuropsychiatrists acted as screeners. On their desks were the survey forms which contained the pertinent information. As the selectee approached the neuropsychiatric screener he placed the physical examination sheet on the table. This sheet contained the neuropsychiatric adjunct test and remarks relating to the neuropsychiatric examination by the examining physicians. The usual stock questions were then asked: Do you have fits? Do you faint or wet the bed? Have you ever been in an institution or hospital? Have you ever been arrested? At what grade did you leave school? Do you feel all right? The general appearance of the selectee was observed as he approached the neuropsychiatric screener, and the manner in which he delivered his papers was also noted. Any selectee who aroused the slightest doubt as to his eligibility for service, either through the survey forms or through information on the examination sheet or his behavior, was sent to an examining psychiatrist, who had a reasonable period of time to make a more complete examination. If the decision was made to reject the selectee, the entire problem was reviewed by the chief neuropsychiatrist, who had at hand all the survey forms. It was his duty to determine any possible discrepancies between the reports and the selectee's condition. Those who have been in induction stations can recognize that this method was not used in other stations.

The following question comes up: Do you feel that this type of examination is a good one? The answer is, according to office standards, that it is not. However, under existing conditions it is the best yet devised.

The next question to be asked was Did it work? The reply to this is apparent in figures obtained from the surgeon of the Sixth Service Command. The neuropsychiatric rejection rate per thousand selectees examined for the period in question was:

National rate	97.2
Detroit	145.6
Milwaukee	107
Chicago	70

Two and one-tenth per cent covered the variation among the three stations on discharges from the service for psychiatric reasons.

With low figures for neuropsychiatric rejections at the Chicago Induction Station and at least average figures for the number of discharges from the Army, one can come to the conclusion that this method is practical, more expedient and more scientific than other methods which were employed.

H. Samson Gordon, M.D., Chicago.

To the Editor:—Replying to the communication of Dr. Amos R. Koontz in the November 9 issue of The Journal, I should like to question whether there has been a larger percentage of psychiatric cases during the most recent conflict as compared with the first world war. Can Dr. Koontz furnish data to substantiate his view? We are told that there were many cases of "shell shock" in the first world war, and many of these as well as others that then escaped notice or were classified as some other disease might now have been properly diagnosed. I believe it reasonable to say that physicians as a group had better psychiatric orientation in World War II than in World War I. This must have been a large factor in recognizing additional numbers of cases. Viewing whatever data are available with these statements in mind, it would seem that the burden of proof rests on the one who states that there was a real rather than only an apparent increase in the percentage of psychiatric cases.

Apart from whether or not a relatively greater number of people were mentally ill during World War II as compared with World War I, it is difficult to see how "too much public emphasis on psychiatric conditions" could effect an increase in the rate. Dr. Koontz apparently feels that this caused an increased amount of malingering. From my own experience and from what I can learn in the literature, outright feigning of an illness was not a common occurrence during this war. Considering men in good mental health, it is open to question not only how well but how likely they are to feign a mental illness and keep this up for a prolonged, indefinite period, lying about it and explaining it to friends and associates. It is the province of the psychiatrist to detect such behavior. Even if psychiatry as a subject were kept from the public, there would still be quite a list of conditions to choose from if one wished to malinger. The Army has felt that an understanding public will provide a more wholesome atmosphere for the returning psychiatrically disabled veteran, and this enlightenment may well far outweigh in good effects the amount lost through "educating the wrong people." Psychiatry now is a subject that can be discussed freely, and it is thereby made less awesome to the public. We would seem to be taking a big step backward to impede their discussion of it.

Concerning the "change in our political philosophy," it has been conceded that a democracy, where individual rights and freedom are stressed, is not always the most ideal environment from which to draw individuals for military service with its inhibitions on personal liberties. The fact that our government "inclined to the left of center" during the developmental years of many men in World War II may, it is granted, have had an adverse effect on the attitudes of these people. Does it not seem more reasonable to suspect from this factor a lessened rate of maladjustment because of the better economic conditions it brought during their developing years?

Dr. Koontz also seems interested in how the Army can avoid taking maladjusted individuals. His statement "Possibly a common sense evaluation of the men made by internists would be more satisfactory than the present psychiatric examination" holds some truth but is misleading. It seems to imply a lack of this ability on the part of psychiatrists, and this I cannot believe. It is conceded that a "common sense" evaluation by any one—say a college professor or a minister—not necessarily an internist, would go far toward keeping out undesirable individuals. It is very difficult to understand why Dr. Koontz considers as a remedy the elimination of the psychiatric examination. During the war I spent several months as a neuropsychiatrist in an overseas disciplinary training center, where nearly four thousand American prisoners were kept. Some of these men were quite normal; relatively few were psychotic. Psychoneurotics and mental defectives made up a good portion of the total. Perhaps the greatest number of those mentally ill were psychopathic personalities—used as the Army employs the term, to indicate a character and behavior disorder. I estimate that about half the total number of men should never have been accepted by the Army and, further, that they could have been kept out by careful psychologic and/or psychiatric examination. If this single group of prisoners had not been allowed to enter the Army, a tremendous saving should have resulted. Consider the loss of material through stealing and destruction of property, courts-martial and imprisonment costs, the often total loss in transporting the man overseas and bringing him back, lowered morale of troops, the poor impression a few such men can create for an entire unit and the trauma to the individual who was necessarily court-martialed for a purely military offense. Some of these remarks can also be applied to the neurotics who had their breakdown on arriving at an overseas port, or while training for combat, and thence were evacuated through medical channels. (I am not, of course, referring to the usual psychiatric casualty of this war, whose injuries must be as honorable as other battle wounds.) Why speak of omitting the one barrier that attempts to keep these men out of the Army?

During the most recent war many men of relative inexperience took on psychiatric work simply because there was no one else to do the job. In addition, many examinations were of necessity entirely too brief. The example of a friend of mine is typical of many, I believe. He was asked "Have you ever been arrested?" When he replied in the negative, he was told to "get back in line." This was his psychiatric examination. Two minutes seems to have been the standard time allowed for this examination in many places. The necessary corrective measures seem obvious. Each potential soldier should be given a carefully administered intelligence test, with special keys for all who fail, in order to detect malingerers. A fully trained man need not see every person, but a psychiatrist should supervise personal interviews carried on by individuals trained in personal interview work. Besides institutional records, very important would be a brief social background on the case. Many men made no mention of prison or other records of social delinquencies. In concluding, it is my feeling that a more careful and more complete psychiatric examination is the answer to the "new tactical alinement" Dr. Koontz calls for.

RICHARD W. FINNER, M.D., New Haven, Conn.

To the Editor:—I notice in the November 9 issue of THE JOURNAL that Dr. Amos R. Koontz of Baltimore in a communication on page 599 makes some inaccurate remarks on the subject of psychiatry in World War I.

In the first paragraph of his letter Dr. Koontz states that "during World War II all inductees had psychiatric examinations the purpose of which was to weed out the prepsychiatric cases. This was not true in World War I."

If Dr. Koontz will review the War Department publication The Medical Department of the United States Army in the World War (1929), volume X, Neuropsychiatry, he will be able to correct his erroneous knowledge of the subject. The Surgeon General's Office at that time, through the efforts of Col. Pearce Bailey, had a well organized group making psychiatric examinations of inductees. I think neuropsychiatric officers were well distributed at the various cantonments. I have personal knowledge of the work done because I was a lieutenant in the Medical Corps, assigned to psychiatric work at a recruit depot. The work was exclusively neuropsychiatric, and we made reports direct to the Surgeon General's Office, Neuropsychiatric Division.

I refer to chapter 4, page 57, of the War Department history mentioned, which discusses at length "detection and elimination of individuals with nervous or mental disease."

CLIFFORD W. MACK, M.D., Livermore, Calif.
Medical Director, Livermore Sanitarium.

GREETINGS FROM AUSTRALIA

To the Editor:—As we approach the season of thanksgiving and memories, we turn in appreciation to those of our colleagues from the United States who were in our country during the years 1942-1945.

In all our states where they were stationed these men and women have left memories of work done—kindliness and wholehearted cooperation which will never be effaced.

My own committee naturally had much to do with them and we find that this is a season when we should like them to know that we have not forgotten their material and intellectual friendship and cooperation.

Knowing that THE JOURNAL is almost universally read, I write this in the hope that these many hundreds of doctors in all the services may know that their work for good will and medical science still survives.

S. F. MCDONALD, M.D., F.R.C.P., F.R.A.C.P.,
University of Queensland Medical School,
Herston Road,
Brisbane.
Chairman, Postgraduate Medical Education Committee.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Use of Unsterile Instruments for Removal of Cyst.—The plaintiff sued for damages allegedly caused by the negligence of the defendant physician. From an adverse judgment the defendant appealed to the Supreme Court of Oregon

The defendant was engaged to remove a cyst from the back of the plaintiff's wrist To facilitate the operation, which took about an hour and a half, the plaintiff was placed on an examination table with her arm resting on a board extending out from one side The instruments which the defendant had not yet used rested on a nearby table; those which he had used were placed on the board on which the plaintiff's arm rested and picked up again as the defendant needed them Both the arm board and the table were covered with a sterile towel, but *at no time during the operation did the defendant wear rubber gloves, a face mask or a surgical robe* Following the operation the plaintiff went home. Two days later her wrist began to swell and discharge, so she entered the hospital, where she remained for about three weeks, during which time, while under the continuous treatment of the defendant, the wrist became progressively worse Plaintiff was then removed to a hospital at Olympia, Wash, where she was treated by a Dr F H Hartung At the trial Dr Hartung testified that there was no infection in the cyst itself but that the infection was the type that comes from either the use of unsterile instruments or incomplete antisepsis in preparing for the surgical procedure He testified further.

> Q Doctor, assuming that the plaintiff went to a doctor for treatment and removal of a cyst on the left wrist and that the doctor undertook to perform the operation and give the treatment in his office and that the *instruments that were used for the operation were lying out in the open on a table for a period of one and a half hours or more*, would you say those instruments would have remained sterile all that time? A Definitely not
>
> Q And assuming further that a doctor in the performance of the treatment and operation had no rubber gloves or other covering of the hands and handled the instruments from time to time during that period of one and a half hours or more, would you say they would be sterile? A Absolutely no
>
> Q. Would you say that that would be a proper practice under any circumstances? A No, sir
>
> Q Doctor, is it a relatively easy matter to keep instruments for operative purposes in a sterile condition even while using them in and about the office? A Yes, sir

Dr. Hartung also stated that in ordinary operative procedure the instruments are never uncovered until the operation begins Even under the most rigid conditions, instruments once uncovered will not remain sterile

There was evidence on behalf of the defendant that instruments which he used were sterile to start with and that, while not being used during the course of the operation, they were placed on sterile towels It was also shown that he used due care in the actual performance of the operation

In the opinion of the court, the evidence was sufficient to justify submission of the cause to the jury. It was not incumbent on the plaintiff, said the Supreme Court, to prove by direct and positive evidence that the infection came from the use of nonsterile instruments Infection is of such a subtle nature that its cause can be determined with only a reasonable degree of certainty. Defendant was operating in a noninfected area According to the plaintiff's family physician the infection did not come from the cyst itself but from the kind of germ that could come from unclean instruments Defendant testified that, in his opinion, the infection came from the blood stream but gave no reason therefor except that based on what some nurse had told him He had not made any blood tests From the evidence relative to the exposure of the instruments for a period of one and one-half hours and the manner in which they were handled, we think, continued the court, it is a reasonable inference that the instruments used were not sterile and that the failure of the defendant to exercise due care resulted in the introduction of a germ causing the infection We have no hesitancy in holding that the use of nonsterile instruments is evidence of negligence, the court concluded Accordingly the judgment in favor of the plaintiff was affirmed—*Clemens v. Smith, 134 P. (2d) 424 (Ore., 1943).*

Medical Practice Acts: Revocation of License for Abortion; Necessity of Proving Pregnancy.—After a hearing on charges of unprofessional conduct, the defendant Board of Medical Examiners of the State of California revoked the petitioner's license to practice as a physician and surgeon The petitioner then filed a suit for a writ of mandate to compel the board to reinstate him From a judgment of the trial court denying the writ, the petitioner appealed to the district court of appeals, second district, division 2, California

Section 2377 of that portion of the business and professions code relating to physicians provides.

> The procuring or aiding or abetting or attempting or agreeing or offering to procure a criminal abortion constitutes unprofessional conduct within the meaning of this chapter.

On the basis of this section the petitioner was charged with unprofessional conduct *in that he had performed abortions on* certain named females The petitioner urged that the evidence was insufficient to establish that the women in question were pregnant and relied on a prior California case The court pointed out, however, that the prior case was decided when section 274 of the penal code provided that one is guilty of a felony "who provides, supplies, or administers to any pregnant woman, or procures any such woman to take any medicine, drug, or substance, or uses or employs any instrument or other means whatever, with intent thereby to procure the miscarriage of such woman, unless the same is necessary to preserve her life . . ." In 1935 the legislature amended section 274 by deleting the word "pregnant" in the first clause Proof of pregnancy was therefore no longer required to establish guilt of the crime commonly called abortion Such has been the ruling in a number of jurisdictions having similar statutes The court of appeals said that the trial court was justified in concluding that the petitioner committed certain prohibited acts with the intent to cause a miscarriage. One of the women involved was in normal health before the date in question, and there is no evidence that the acts of petitioner were necessary to preserve her life Accordingly the court of appeals concluded that the evidence clearly sustained the finding that the petitioner was guilty of *unprofessional conduct within the meaning of the Business and* Professions Code. The judgment of the board revoking the petitioner's license was therefore affirmed—*Rinker v. State Board of Medical Examiners of Department of Professional and Vocational Standards, 138 P. (2d) 403 (Calif., 1943)*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in The Journal, Dec 14, page 947

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners *Part II.* Dec 16 17. *Part III* Chicago, Jan 9 11. Sec, Mr Everett S Elwood, 225 S. 15th St., Philadelphia 2

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology. *Oral* Los Angeles, 2d week in April Sec, Dr P. M. Wood, 745 Fifth Ave., New York

American Board of Internal Medicine *Oral.* Chicago, Feb 12 14 *Final date for filing application is Jan 1, 1947. Written* March 17 Asst Sec, Dr. W A Werrell, 1 W Main St, Madison 3, Wis

American Board of Neurological Surgery *Oral* Examination to be given during the Summer. Applications for examination will be accepted until Feb 15 Sec, Dr P. C Bucy, 912 S Wood St, Chicago

American Board of Obstetrics and Gynecology *Part II.* Pittsburgh June 1 7. Sec, Dr. Paul Titus, 1015 Highland Bldg, Pittsburgh

American Board of Ophthalmology· *Oral All Groups Parts I and II.* Chicago, October 1947 Final date for filing application is March 1. Sec, Dr. S J Beach, 56 Ivie Rd, Cape Cottage, Me

American Board of Otolaryngology. *Oral* St Louis, April 16-19 Chicago, Oct. 7-11. Sec, Dr D M Lierle, University Hospitals, Iowa City, Ia

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Digestive Diseases, Fort Wayne, Ind.

13:275-310 (Sept.) 1946

Differences in Excretion of Hippuric Acid and Glucuronates After Ingestion of Sodium Benzoate and Benzoic Acid. I. Snapper and A. Saltzman.—p. 275.
Roentgenologic Evidence of Appendical Abscesses. A. Dallos.—p. 279.
Fasting Gastric Contents as Index of Gastric Functioning. F. Hoelzel.—p. 284.
Gastroscopy as Aid to Diagnosis of Gastric Disorders. A. X. Rossien.—p. 290.
Observations on Percussion of Liver in Acute Infectious Hepatitis. J. I. Goodman.—p. 294.
Idiopathic and Psychogenic Incontinentia Recti. A. Juda.—p. 296.
Causes and Mechanisms of Abdominal Pain. P. J. Schutz.—p. 299.

American Journal of Diseases of Children, Chicago

72:251-370 (Sept.) 1946

Blood Amino Nitrogen Levels: Changes in Blood Amino Nitrogen Levels Following Ingestion of Proteins and of Protein Hydrolysate in Infants with Normal and with Deficient Pancreatic Function. C. D. West, J. L. Wilson and Ruth Eyles.—p. 251.
Criteria for Recognition of Neuroses in Children: Guide for Pediatrician. A. Alpert.—p. 274.
Treatment of Impetigo Neonatorum with Minimal Doses of Penicillin. C. A. Aldrich and C. A. Holmes.—p. 279.
*Clinical Applications of Chick Embryo Cultures: I. Primary Diagnosis of Meningitis and Study of Spinal Fluid in Meningococcemia Without Meningitis; II. In Vivo Streptomycin Sensitivity Test. C. H. Kempe, E. B. Shaw and H. K. Silver.—p. 281.
Adenomas of Large Intestine in Children. E. B. Helwig.—p. 289.
*Bronchiectasis Following Primary Tuberculosis. Edna M. Jones, W. M. Peck and H. S. Willis.—p. 296.
Periarteritis Nodosa Complicating Scarlet Fever. A. R. Peale, N. Gildersleeve and P. F. Lucchesi.—p. 310.

Chick Embryo Cultures.—Kempe and his associates examined the spinal fluid of more than 100 patients with suspected meningitis, poliomyelitis or encephalitis. Cultures revealed purulent meningitis in 51 of these patients. All fluids were cultured by routine methods on blood agar, Avery's broth and Loeffler's medium for use in slants; agar plates were incubated under reduced oxygen tension as indicated. Simultaneously, each spinal fluid was dropped on the chorioallantoic membrane of two chick embryos. Culturing of spinal fluid on the three routine laboratory mediums alone resulted in an etiologic diagnosis in 41 of 51 cases, or 80 per cent. The chick embryo culture revealed the causative organism in 49 out of 51 cases, or 96 per cent. The rapidity of the etiologic diagnosis was increased many fold by the chick embryo method. This permitted the institution of specific therapy in a few hours, as compared with the several days which frequently must elapse when conventional methods of culture are used. By using chick embryo cultures it is possible to demonstrate the presence of organisms in spinal fluid when the latter shows no alteration in its cytologic or chemical nature. An in vivo streptomycin sensitivity test employing the chick embryo has been devised, and the streptomycin sensitivity of a number of organisms has been determined.

Bronchiectasis Following Primary Tuberculosis.—Jones and her associates present observations on tuberculous children in the Detroit Municipal Tuberculosis Sanatorium. Pulmonary tuberculosis in children is frequently complicated by tuberculosis of a bronchus. The bronchial disease may be present as granulomatous tissue (tuberculoma), as ulcer or merely as edema and inflammation. Tuberculous tracheobronchial lymph nodes often encroach on the lumen by pressing and at times eroding the bronchial wall. Such bronchial lesions are frequently associated with obstructive pneumonitis. A number of these children were recalled for evaluation of their present condition and especially for a survey of their bronchial system by bronchography. Bronchi of 37 children have been surveyed in this manner about three and one-half years after the pulmonary lesions had cleared. Iodized poppyseed oil 40 per cent could not be placed in the previously involved areas in 3 children. Obvious signs of bronchiectasis were present in 24 of 34, or 70 per cent. Pulmonary tuberculosis in children appears to be a common cause of bronchiectasis. Few of the 24 children with bronchiectasis presented conspicuous symptoms. Pneumonectomy was advised for 1 child.

American Journal of Medical Sciences, Philadelphia

212:129-250 (Aug.) 1946

Leukocytic Response of Patients with Experimentally Induced Infectious Hepatitis. W. P. Havens Jr. and Ruth E. Marck.—p. 129.
Retroperitoneal Splenomegaly: Occurrence in Case of Leukopenic Plasma Cell Leukemia. J. W. Bills and O. H. P. Pepper.—p. 139.
Modified Cephalin Cholesterol Test (Hanger) in Study of Hepatic Disease. A. W. Frisch and J. J. Quilligan Jr.—p. 143.
*Effect of Prostigmine (Neostigmine) on Muscle Spasm of Rheumatoid Arthritis. V. G. Balboni, J. L. Hollander and D. M. Kydd.—p. 153.
Melituria in Healthy American Men, with Special Reference to Transitory Glycosuria. I. J. Wolman.—p. 159.
Reaction of Vessels of Mesentery and Intestine to Angiotonin and Renin. R. G. Abell and I. H. Page.—p. 166.
Sulfapyrazine—Its Use in Prophylaxis of Respiratory Disease. R. H. Broh-Kahn and G. Erdman.—p. 170.
*Vitamin Levels in Pernicious Anemia. D. Cayer, J. M. Ruffin and W. A. Perlzweig.—p. 179.
Use of Histamine Antagonist Beta-Dimethylaminethyl Benzhydryl Ether Hydrochloride in Allergic Disease. A. S. Friedlaender.—p. 185.
Capillary Microscopy, with Special Reference to Capillary Petechiae. E. Davis.—p. 192.
Clinical and Laboratory Studies of Liver Function in Therapeutic Malaria. P. M. Glenn, L. I. Kaplan, H. S. Read and F. T. Becker.—p. 197.
Effect of Room Temperature on Sedimentation Rate of Red Blood Cells of Man. W. B. Wartman.—p. 207.
Aplastic Anemia in Soldiers Treated with Atabrine (Quinacrine). R. P. Custer.—p. 211.
Temporal Arteritis and Loss of Vision. H. P. Wagener.—p. 225.
Pituitary Diabetes. F. D. W. Lukens.—p. 229.
Organizing Hemothorax—Clinical Entity. R. T. Crowley.—p. 241.

Effect of Neostigmine in Rheumatoid Arthritis.—Balboni and his associates administered neostigmine to 23 patients with active rheumatoid arthritis. All patients were hospitalized during the period of neostigmine therapy. Thirteen of the patients had rheumatoid arthritis with involvement of various peripheral joints, 8 had rheumatoid spondylitis with involvement of the sacroiliac joints and spine, and 2 had involvement of both the spine and the sacroiliac joints as well as peripheral joints. The neostigmine was given in doses up to the limit of tolerance with the aim of relieving the muscle spasm associated with rheumatoid arthritis. A satisfactory therapeutic response was not obtained in any case. Only 2 cases showed appreciable decrease in muscle spasm, and even in 1 of these the effect was inconsistent, as the spasm about other affected joints coincidentally increased. The second case had already started into spontaneous remission. Neostigmine caused unpleasant and often alarming reactions in 14 of the 23 cases studied. The authors do not recommend neostigmine in the treatment of rheumatoid arthritis.

Vitamin Levels in Pernicious Anemia.—Cayer and his associates made vitamin determinations on 8 patients with pernicious anemia. Comparative studies were made on 25 patients diagnosed as having a B complex deficiency and on 30 medical students who were regarded as healthy. The vitamin levels in the group having a B complex deficiency closely paralleled those of the pernicious anemia patients. There was no apparent correlation between the degree of anemia and the vitamin levels in either group. The levels of vitamin A and carotene in general reflected the nutrition of the group and, although lower than those of controls, were within normal limits. This is in striking contrast to sprue, in which a profound depletion of vitamin A and carotene in the plasma was found. The blood levels of vitamin C were essentially normal. Although the group studied is small, the definite lowering of nicotinic acid, thiamine and riboflavin levels in these patients cannot be overlooked. The occasional reports of improvement of oral lesions on B complex therapy alone is not surprising. The results of this study would justify the administration of B complex vitamins to patients with pernicious anemia if liver extract alone fails to produce a satisfactory response.

American Journal of Ophthalmiology, Cincinnati

29:1071-1214 (Sept.) 1946

Treatment of Glaucoma with Di Isopropyl Fluorophosphate. P. R. Mc Donald—p. 1071.
Indications and Contraindications for Keratoplasty and Keratectomies R. Castroviejo—p 1081.
Arsenical Eye Burns: Case Report. G I. Uhde.—p 1090
Device for Group Demonstration of Astigmatism Tests. W. H. Crisp —p 1094.
Cultivation of Human Tumor in Anterior Chamber of Guinea Pig's Eye E. M. Blake.—p. 1098.
*Corneal Ulcer Treated with Streptomycin. N. F. Alberstadt and A. H Price—p 1106.
Legal Ophthalmology. J. H Hinshaw.—p. 1112
General Anesthesia in Ophthalmic Surgery. M. Bien—p. 1119.
Keratoconjunctivitis Sicca: Sequela to Purulent Erythema Exudativum Multiforme (Stevens Johnson's Disease). J. M. Richards and H. H Romaine—p. 1121.
Comparative Study of Sutures Employed in Surgery of Extraocular Muscles C Berens and H H. Romaine—p 1126.
Infections and Reflex Disorders of Eye from Dental Affections D. Kravitz—p 1135.
Conjunctivitis Associated with Erythema Multiforme Bullosa E E Grossmann.—p. 1146.

Streptomycin in Corneal Ulcer.—Nine patients with corneal ulcer wero given streptomycin as an adjuvant to the routine treatment with atropine sulfate, hot compresses and, occasionally, typhoid vaccine Streptomycin hydrochloride was used in a concentration of 10,000 units in each cubic centimeter of isotonic solution of sodium chloride. Two drops were placed in the affected eye every two hours day and night. Streptomycin was found to be a useful adjuvant to the treatment of corneal ulcers

American Journal of Pathology, Ann Arbor, Mich.

22:867-1080 (Sept) 1946

*Fulminant Form of Epidemic Hepatitis B Lucké and T Mallory —p 867.
Bone Infarcts Case Report with Autopsy Findings. S C. Kahlstrom and D. B Phemister—p 947
Pathology of Japanese B Encephalitis H M. Zimmerman—p. 965.
Human Salmonellosis Due to Salmonella Senftenberg T J. Curphey —p 993.
*Arterial Calcification in Infancy, with Special Reference to Coronary Arteries W A Stryker—p 1007
Skeletal Changes Caused by Combined Administration of Thyroxin and Estrogen M Silberberg and Ruth Silberberg—p 1033
Leiomyoma of Ventral Ligament of Oviduct of Chicken. N. M. Nelson —p 1047.
Occurrence of Neoplasms in Liver, Lungs and Other Tissues of Rats as Result of Prolonged Choline Deficiency. D. H Copeland and W. D Salmon—p 1059

Fulminant Form of Epidemic Hepatitis.—The present series includes 29 examples of the endemic and 72 of the epidemic variant of "spontaneous" hepatitis, and 77 cases presumed to be "homologous serum hepatitis" following transfusions of blood or blood derivatives. This study is based principally on 94 cases in which the clinical course did not exceed nine days Thirty-nine others with a duration of from ten to nineteen days supplied additional information, for many of them presented lesions indistinguishable from those of the more fulminant form The subacute cases clinically and pathologically resemble those of the 1942 epidemic. The average mortality during the period covered by this study was 0 3 per cent. Pathologically, lesions other than those in the liver were relatively slight; the changes found in "spontaneous" and in "inoculation" hepatitis were in every respect similar. Microscopically, the destructive process was limited specifically to liver cells. The inflammatory infiltration was most conspicuous at the lobular peripheries. There was often disparity between the apparent age of the lesions and the duration of symptoms. The pathologic changes in the liver were in many instances obviously older than the clinical history suggested. The factors responsible for the fulminant form are difficult to assess. It is suggested that more or less interrelated host factors, such as fatigue, trauma and nutritional disturbances, rather than the strain or the amount of the infectious agent, play a dominant part.

Calcification of Coronary Arteries in Infancy.—Stryker says that, unlike occlusive lesions of the coronary arteries of older children and adults, which may result from any one of several diseases, occlusion of these arteries in infants is nearly always due to a single type of arterial disease. This lesion consists in calcification of the wall of the artery with fibroblastic proliferation of the intima. The intimal proliferation may eventually cause complete or nearly complete obliteration of the lumen Fifteen cases of calcification of the coronary arterial wall with intimal proliferation in infants have been previously reported. In some instances this involvement has been the cause of death; in others, similar involvement of other vessels has been fatal. The ages of the 15 patients ranged from 1 day to 27 months. Seven were boys and 8 were girls. In the Department of Pathology of the University of Michigan the hearts of 4 infants with calcification of the coronary arteries have been examined A fifth case was seen in the pathologic service of the Providence Hospital, Detroit.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

56:279-418 (Sept) 1946

Optochiasmatic Arachnoiditis. E P. Pendergrass and C. R. Perryman. —p 279.
Some Observations Concerning Hypophysial Fossa. G. W. Heublein —p 299.
Roentgenographic Appearance of Falx Cerebri. E G. Robertson.—p 320.
*Primary Atypical Pneumonia: Disease of Segmental Distribution. W. E Crysler—p. 324.
Roentgenologic Studies on Effect of Synthetic Folic Acid on Gastrointestinal Tract of Patients with Tropical Sprue. R. L Hernandez Beguerie and T. D Spies—p 337
Reticuloendotheliosis, with Report of 2 Cases A. E Imler.—p 343.
Roentgenologic Examination of Power of Resistance of Tracheal Wall Important Sign in Treatment of Tracheal Stenosis M. Sgalitzer —p 355
New Medium for Cystourethrography. F. O. Coe and P. S. Arthur. —p 361.
Treatment of Peritendinitis Calcarea of Shoulder Joint by Roentgen Irradiation: Report of 100 Cases I Klein—p. 366
Simplification of Tissue Dose Estimation in Roentgen Therapy. Anna Hamann—p 376

Primary Atypical Pneumonia.—Crysler reports experience with the x-ray examination of the chest in the erect position during suspended deep inspiration in approximately 1,000 patients with definite or clinically suspected atypical pneumonia. In the established case, the x-ray opacity produced by atypical pneumonia is homogeneous and translucent; early changes cause blurring of the bronchopulmonary markings; resolution is almost in reverse order, structural intensification being the last sign of previous parenchymal infiltration to disappear.

Annals of Surgery, Philadelphia

124:479-606 (Sept.) 1946

Perforated Gastroduodenal Ulcers. Study of 166 Cases H. B. Olson and M Norgore—p 479
Congenital Stenosis of Small Intestine, with Retention of Nonpenetrating Foreign Bodies. Report of 2 Cases M. Williams.—p. 492.
*Familial Diverticulosis of Colon: Report of 7 Cases in one Family of 9 Persons H L Schlotthauer.—p. 497.
Carcinoma of Meckel's Diverticulum. Case Report. K. J. Costich and W. L McNamara—p. 503.
Enterogenous Cysts Report of Case Involving Rectum. B. S. Custer, A Kellner and H. M. Escue.—p 508
Liposarcoma of Mesentery. Ruth B Benedict—p. 519.
Splenectomy Removal of Spleen Weighing 5,450 Grams J. L. Madden and C H Appleberry.—p 524.
Surgical Treatment for Dysphagia Lusoria R E Gross—p 532.
Pulmonary Actinomycosis: Its Treatment by Pulmonary Resection in Conjunction with Chemotherapy. Report of 2 Cases E. B. Kay. —p 535.
Management of Injuries to Stensen's Duct. S. C. Newman and D. B. Seabrook—p. 544.
Mastectomy for Gynecomastia Through Semicircular Intra Areolar Incision J P. Webster.—p. 557.
Subtrochanteric Osteotomy for Ununited Fracture Neck of Femur. K Speed—p. 576
Incisions in Surgery of Aneurysms, with Special Reference to Exploration in Antecubital and Popliteal Fossae H. B Shumacker.—p. 586
Cross Nerve Anastomosis in Man A R Sadr—p. 599.

Familial Diverticulosis of Colon.—Schlotthauer reports the occurrence of diverticulosis of the colon in 7 brothers. After 2 members of this group had developed symptoms referable to the colon and each was found to have diverticulosis involving the entire large bowel, a study was made of the remaining brothers and sisters. Each of these was requested to fill out a comprehensive history form pertaining to the gastrointestinal tract. Roentgenograms of the colon were obtained in each case after the administration of a contrast enema or after the ingestion of contrast mediums. These persons reside in widely separated parts of the Pacific coast area, and the roentgenograms were made in different laboratories and under varying conditions. In the 2 sisters of these 7 brothers evidence of diverticulosis could not be found. The author thinks that heredity should be included as a major causative factor in the etiology of diverticulosis of the colon.

Archives of Ophthalmology, Chicago

36:263-386 (Sept.) 1946

Selection of Color Vision Tests for Army Air Forces: Summary of Studies Made at Army Air Forces School of Aviation Medicine. Louise L. Sloan.—p. 263.

Ophthalmic Penicillin Ointments. L. von Sallmann, Anne E. Grosso and Mary Glyde Marsh.—p. 284.

Effects of Atropine Sulfate, Methylatropine Nitrate (Metropine) and Homatropine Hydrobromide on Adult Human Eyes. A. V. Wolf and H. C. Hodge.—p. 293.

Night Vision: II. Comparison and Critique of Various Procedures Used for Night Vision Testing. W. J. Holmes.—p. 302.

*Reduction of Reflections. R. Graham.—p. 315.

Preservation of Corneal Tissue for Transplantation. C. I. Thomas. —p. 321.

Metabolism of Retina. A. C. Krause and J. A. Sibley.—p. 328.

Reduction of Reflections.—Graham points out that there s a fair proportion of patients who are consciously annoyed y reflections from their glasses and who are greatly relieved vhen these are substantially reduced. Reflections can conceal he eyes of the wearer from any one looking at him. To ninisters, teachers and all who wear glasses when appearing efore groups of people it is a serious impediment. Graham hinks that of all the technical advances to come out of the ecent war, probably the most significant optically is the oating of lenses with reflection reducing films. The process tilized in optical lenses for the armed forces consists in lepositing a thin film of magnesium fluoride on optical surfaces n high vacuum and under considerable heat. Coating available oday is durable, if not permanent, and reduces reflections ubstantially, although it does not extinguish them or make he glasses invisible. Coating is a new and important developnent which has reached a state of real usefulness.

Arizona Medicine, Phoenix

3:271-332 (Sept.) 1946

Management of Pyogenic Meningitis in Infants and Children. G. W. Salmon, J. H. Park Jr. and Laura Bickel.—p. 293.

Coarctation of Aorta. G. S. Enfield.—p. 302.

Studies on Effect of Diluting Fluids on Serologic Titers: I. Comparison of Normal Saline, 2.5 Per Cent Saline and Pooled Negative Sera as Diluting Agents. E. L. Breazeale and T. R. Reusser.—p. 304.

D. H. E. 45 (Dihydroergotamine), New Drug in Treatment of Migraine: Case. E. J. Gotthelf.—p. 307.

Bulletin New York Academy of Medicine, New York

22:451-500 (Sept.) 1946

Management of Blood Preservation and Blood Substitutes. S. H. Armstrong.—p. 451.

Planned Convalescence. H. A. Rusk.—p. 465.

22:501-560 (Oct.) 1946

General Pathology of Tumors of Endocrine Glands. H. T. Karsner. —p. 503.

Recent Advances in Use of Curare in Clinical Practice. E. B. Schlesinger.—p. 520.

Summary of Present Status of Our Knowledge of Factors Controlling Blood Pressure. G. A. Wolf Jr.—p. 530.

Apical Systolic Murmurs in Incipient Rheumatic Heart Disease. A. M. Master.—p. 535.

Iowa State Medical Society Journal, Des Moines

36:385-418 (Sept.) 1946

Infectious (Viral) Hepatitis. W. S. Middleton.—p. 385.

Treatment of Burns. H. I. Down.—p. 390.

Papilledema. P. J. Leinfelder.—p. 394.

Principles of Military Surgery Applicable to Civil Practice, with Especial Reference to Acute Traumatic Lesions. G. S. Rost.—p. 396.

Eosinophilic Granuloma of Bone, with Report of Case. J. T. Bakody. —p. 397.

Journal of Immunology, Baltimore

53:303-410 (Aug.) 1946

Increasing Yield and Potency of Typhus Vaccine Prepared from Infected Yolk Sacs. V. Groupe, Clara Nigg and J. O. MacFarlane.—p. 303.

Allergenic and Anaphylactogenic Properties of Vaccines Prepared from Embryonic Tissues of Developing Chicks: I. Skin Sensitivity Following Subcutaneous Inoculation of Typhus Vaccines in Man. H. Plotz.—p. 315.

Id.: II. Anaphylactogenic Properties of Typhus Fever Vaccines and Equine Encephalomyelitic Vaccines. E. J. Coulson and H. Stevens. —p. 321.

Id.: III. Study to Determine Whether Chick Embryo Yolk Sac Vaccines Contain Sufficient Egg Proteins to Cause Severe Systemic Reactions if Given to Egg, Sensitive Individuals. A. Stull.—p. 343.

Studies on Physiology of Anaphylactic Shock: II. Reactivity of Isolated Rat Intestine to Antigen, to Histamine and to Acetylcholine. A. Hochwald and F. M. Rackemann.—p. 355.

Endotoxic Factors of Rickettsia Prowazeki and Their Immunologic Relationship to Endotoxins of Other Gram Negative Micro-Organisms. L. Olitzki, J. W. Czaczkes and A. Kuzenok.—p. 365.

Chemotherapy of Experimental Anthrax Infections. E. S. Miller, E. B. Scott, H. A. Noe, S. H. Madin and T. F. Henley.—p. 371.

Immunologic Studies in Rheumatic Fever: II. Antistreptolysin Patterns in Rheumatic Children. L. M. Taran, J. M. Jablon and Helen N. Weyr.—p. 381.

Studies on Ragweed Pollen Sensitization in Rabbits and Guinea Pigs. Anna M. Kulka and Dorothy Hirsch.—p. 391.

Journal-Lancet, Minneapolis

66:277-318 (Sept.) 1946

Sulfonamides and Antibiotics in Prevention and Treatment of Infectious Diseases. W. W. Spink.—p. 277.

Graduate Student and Research. O. H. Wangensteen.—p. 284.

Anopheline Mosquitoes in Montana. D. J. Pletsch.—p. 289.

Journal of Urology, Baltimore

56:271-398 (Sept.) 1946

*Use of Fibrinogen Coagulum in Pyelolithotomy. J. E. Dees.—p. 271.

Intravenous Urography in Acute Renal Colic. T. J. Florence, W. S. Howland and H. S. Weens.—p. 284.

Hydronephrosis in Soldiers Due to Obstruction at Ureteropelvic Junction. H. R. Newman.—p. 292.

Association of Hypernephroma with Amyloidosis of Kidney. A. Hyman and H. E. Leiter.—p. 303.

Unique Case of Submucosal Epithelial Nests in Ureter and Renal Pelvis. H. S. Everett and G. J. Wayburn.—p. 310.

Instrumental Perforation of Ureter. F. S. Howard.—p. 319.

Ectopic Ureter Draining into Seminal Vesicle. L. W. Riba, C. J. Schmidlapp and N. L. Bosworth.—p. 332.

Bladder Biopsy: Evaluation of Cystoscopic Procedure. M. M. Melicow.—p. 339.

New Bladder Evacuator. L. J. Kennedy and P. M. Cornwell.—p. 349.

Diverticula of Prostate. E. Hock.—p. 353.

Neoplasms of Testis. O. Auerbach, O. A. Brines and A. Yaguda. —p. 368.

Oxidized Cellulose (Absorbable Hemostatic Gauze; Cellulosic Acid): Its Use in Genitourinary Surgery. G. W. Fish.—p. 375.

Cyst of Accessory Genital Tract: Case Report, with a Review of Literature. A. J. Lund and M. M. Cummings.—p. 383.

Urinary Extravasation: Study of 60 Cases. W. S. Howland.—p. 387.

Ditopax—New Excretory Urographic Medium: Clinical Report on 1,280 Injections. W. M. Kearns, H. Hefke and S. A. Morton.—p. 392.

Fibrinogen Coagulum in Pyelolithotomy.—Dees says that the routine use of x-rays in the postoperative period reveals the high incidence of incomplete removal of renal calculi. In an effort to insure the complete removal of all free stones from the pelvis of the kidney, as well as to reduce to a minimum the trauma to which the kidney is subjected at the time of operation, a new technic for pyelolithotomy has been developed. At open operation solutions of human fibrinogen and thrombin are simultaneously injected into the renal pelvis, filling it completely. A firm tenacious coagulum results which forms a perfect mold of the cavity of the pelvis, regardless of its configuration, and within this clot are incorporated all free stones. Four minutes after injection of the fluid material the coagulum is removed through the usual pyelotomy incision. All free stones within the pelvis should be removed, incorporated within the clot. The results were perfect in 28 cases, partially satisfactory in 6 cases and a failure in 2 cases. Five additional cases were failures because of technical reasons.

Medicine, Baltimore

25:215-342 (Sept.) 1946

Clinical and Therapeutic Aspects of Conflagration Injuries to Respiratory Tract Sustained by Victims of Cocoanut Grove Disaster. M. Finland, C. S. Davidson and S. M. Levenson.—p. 215.

Coronary Circulation. O. D. Ratnoff and M. Plotz.—p. 285.

Military Surgeon, Washington, D. C.

99:177-272 (Sept.) 1945

Acute Myocardial Infarction in Men Below Forty. F. Steigmann and F. Glassner.—p. 177.
Management of Shock Ward. R. Birchall.—p. 181.
Treatment of Fracture Dislocations of Proximal Interphalangeal Joints of Fingers. H. A. Schulze.—p. 190.
Otomycosis: Some Remarks Concerning Its Diagnosis and Treatment. W. D. Gill.—p. 192.
Bismuth Gingivostomatitis. I. W. Scopp.—p. 196.
Fractures of Clavicle in Military Trainees. R. E. Van DeMark and M. C. Goodman.—p. 197.
Immune Serum Globulin (Gamma Globulin) in Prophylaxis of Mumps Orchitis. S. Candel.—p. 199.
Sclerosing Solution in Treatment of Pilonidal Cysts. J. C. Dunn. —p. 202.
Medical Air Evacuation in Army Air Forces. D. Ginsburg.—p. 204.
Cervical Murmurs with Normal Hearts. H. A. Arkless.—p. 210.
Voluntary Nystagmus: Case Report. J. M. Schneck.—p. 211.
Responsibilities of an Autopsy Surgeon. F. K. Mostofi.—p. 212.
Appraisal of Rapid Killing Power of High Velocity Bullets. H. Lamport, A. A. Ward, and M. G. Schorr.—p. 215.
Veterans Education and Training. O. N. Bradley.—p. 219.
Doctors at Arms: James McHenry—Secretary to Chief. J. M. Phalen. —p. 223.

Nebraska State Medical Journal, Lincoln

31:345-388 (Sept.) 1946

Management of Acute Intestinal Obstruction. R. Woodruff.—p. 348.
Analytic Survey of Goiter Management, University of Nebraska Hospital, 1935-1944. H. H. Davis.—p. 355.

SYMPOSIUM ON BLEEDING FROM ALIMENTARY TRACT

Systemic Causes of Gastrointestinal Hemorrhages. A. S. Rubnitz. —p. 361.
Esophageal and Gastric Hemorrhage. J. E. Courtney.—p. 365.
Hemorrhage from Small Bowel. M. W. Barry.—p. 367.
Vincent's Anginal Infection of Throat. J. C. Davis.—p. 370.

New England Journal of Medicine, Boston

235:347-398 (Sept. 12) 1946

•Acute Myocardial Infarction: Study of 100 Consecutive Cases. W. N. Chambers.—p. 347.
Use of Sulfadiazine in Presence of Hematuria. J. H. Nicholson. —p. 353.
•Use of Ether in Narcoanalysis of Patients with War Neuroses. H. H. Brewster.—p. 357.
Enhancing the Riboflavin Content of Mare's Milk. A. D. Holmes. —p. 360.
Gold Therapy in Rheumatoid Arthritis. C. L. Short, W. W. Beckman and W. Bauer.—p. 362.
Adenoma of Bronchus.—p. 390.
Double Intussusception and Volvulus of Ileum, Led by Adenomatous Polyp.—p. 393.

Acute Myocardial Infarction.—Chambers presents clinical observations on 100 consecutive cases of acute myocardial infarction observed at St. Luke's Hospital in New York City. The older the patient at the time of the initial attack, the more serious was the prognosis. The incidence was higher among men than among women, but mortality was higher among women, whose attacks tended to occur later in life. The mortality was higher in patients with a history of cardiac decompensation. Long standing angina or dyspnea had no influence on the prognosis. Although pain was an outstanding complaint, it was not present in 21 per cent of the cases.

Ether in Psychotherapy.—The patients treated by Brewster were combat soldiers who had spent from two to six weeks in other hospitals en route. Some patients had been given pentothal at the forward hospitals; other patients had received sedation and rest. The symptoms were anxiety and tremulousness, sensitivity to noise, anorexia, recurrent terrifying dreams and insomnia. On the day after admission the patient received an ether interview, which was followed by two days of light sedation during the afternoon and night and insulin therapy in the morning. During the next three days the patient received insulin in the morning and group psychotherapy and physical exercises in the afternoon. After this he was transferred to a reconditioning company for ten days and then was interviewed and reevaluated by the psychiatrist. Ether was administered by the open drop method. Within two to five minutes the patient reached a mental state in which he was reliving his painful battlefield experience and expressing the emotion associated with it. As soon as he had made the mental transition to a hypnotic state, ether administration was stopped. The patient remained in this state as long as the psychiatrist chose to maintain it. Occasionally the patient suddenly came out of the hypnotic state, and ether was readministered. The psychiatrist brought the patient out of the hypnotic state by reviewing chronologically the events leading up to admission to the hospital. Since the patient was conscious throughout the ether interview, he did not usually forget the material discussed during the abreaction. That ether was the significant factor in the therapeutic results obtained from the two week treatment program is suggested by the following statistics: Fifty neurotic patients received this two week program of treatment except that the ether interviews were omitted; only 2 of these patients were capable of resuming duty overseas. One hundred similar patients received the two week program of treatment, including the ether interviews. Of these, 50 were satisfactorily performing noncombat duty overseas one and two months after discharge from the hospital.

New York State Journal of Medicine, New York

46:1983-2094 (Sept. 15) 1946

Route of Percutaneously Applied Antigen Transported Through Body by Electrophoresis. A. Walzer and H. G. Golan.—p. 2027.
Penicillin Ointment in Treatment of Diseases of Skin. J. J. Hallett, E. D. Osborne and J. W. Jordon.—p. 2033.
Resistant Dermatophytosis and Its Treatment. R. M. Montgomery and Esther A. Casper.—p. 2038.
Syphilis in Army Separatees. T. Rosenthal and N. Sobel.—p. 2042.

46:2095-2222 (Oct. 1) 1946

Anesthesia for Sympathectomy in Hypertension. D. L. Burdick, M. L. Phelps and M. C. Peterson.—p. 2139.
Aids in Thoracic Surgery. C. L. Burstein and E. A. Rovenstine. —p. 2142.
Use of Ozonides in Dermatology. H. Sharlit.—p. 2147.
Treatment of Experimental Syphilis with Penicillin. C. M. Carpenter, Ruth A. Boak and L. M. Jacobs.
Pigmentary Changes in the Skin in Negro. G. A. Spencer.—p. 2154.
Report on Outbreak of Endemic Febrile Illness, Not Yet Identified, Occurring in New York City.. B. Shankman.—p. 2156.
Neurodermatitis and Occupational Dermatitis. O. L. Levin and H. T. Behrman.—p. 2160.
Results of Treatment of Psychoneuroses by General Practitioner: Follow-Up Study of 500 Cases. P. G. Denker.—p. 2164.

Psychosomatic Medicine, Baltimore

8:293-366 (Sept.-Oct.) 1946

Studies on Nature of Certain Symptoms Associated with Cardiovascular Disorders. G. A. Wolf Jr. and H. G. Wolff.—p. 293.
Hormonal Modification of Social Behavior: II. Effects of Sex Hormone Administration on Social Dominance Status of Female Castrate Chimpanzee. H. G. Birch and G. Clark.—p. 320.
Electrocardiographic Study of Psychoneurotic Patients. S. S. Winton and L. Wallace.—p. 332.
Inguinal Hernia in Psychiatric Patients. P. Bergman.—p. 338.

Review of Gastroenterology, New York

13:347-416 (Sept.-Oct.) 1946

Radiation Effects on Human Stomach: Preliminary Report. I. B. Brick.—p. 363.
Pituitary Tumors and Peptic Ulcers. H. T. Wilson, J. D. Olson and A. B. Rivers.—p. 371.
Chronic Parenchymatous Hepatitis, Cause of Latent Hepatic Disease. A. O. Wilensky.—p. 373.
New Light Weight, Extra Flexible Gastroscope. A. R. Hufford.—p. 381.
Brucellosis and Digestive Tract Hemorrhages. M. Allende.—p. 383.

United States Naval Med. Bulletin, Washington, D. C.

46:1493-1638 (Oct.) 1946

Further Studies on Use of Tantalum for Cranioplasties. O. H. Fulcher. —p. 1493.
Simplified Technic for Fabrication of Tantalum Skull Plates. R. G. Gerry.—p. 1499.
Studies on New Insect Repellents. M. Pijoan, H. J. Gerjovich, M. L. Hopwood, and Others.—p. 1506.
Achievement of Navy Peacetime Medicine. B. F. Dixon.—p. 1523.
Prevention and Treatment of Aerotitis Media. C. W. Shilling, H. L. Haines, J. D. Harris and W. J. Kelly.—p. 1529.
Radium Therapy in Aerotitis Media. P. Northington.—p. 1559.
Significance of Hanger's Test (Cephalin-Cholesterol Flocculation Test) in Disorders of Stomach and Colon. H. A. Monat and J. H. Batzle Jr.—p. 1568.
Neurosurgery on Board an Attack Transport (Hospital). C. D. Hawkes —p. 1571.
Influenza Aboard an Attack Transport. J. E. McFarland.—p. 1576.
Diet Aboard an Auxiliary Ship. R. W. Hillman.—p. 1579.
Usefulness of Cornell Selectee Index at Neuropsychiatric Unit of Naval Training Center. H. I. Weinstock and R. I. Watson.—p. 1583.
Intestinal Parasitism: Statistical Study on 1,000 Patients Recently Returned from Pacific Area Duty. P. Michael.—p. 1589.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

58:213-262 (Sept.-Oct.) 1946

*Clinical Study of Sulfonamide Dermatitis. B. Phillips.—p. 213.
Inquiry into Social Background of Convicted Women at Holloway Prison Infected with Venereal Diseases. K. Edkins.—p. 228.
Case of Allergy to Phenylhydrazine. B. Solomons.—p. 236.

Sulfonamide Dermatitis.—Phillips reports 100 cases of sulfonamide dermatitis observed among 2,430 cases of skin disease in the dermatologic wards of several military hospitals. These cases are compared with 100 controls in which sulfonamides had not been administered and 100 cases in which sulfonamide therapy had been administered at some period of life. Previously described tests for hypersensitivity to sulfonamides have been found unsatisfactory and a new method has been evolved, which consists of a combined patch and oral test. This test has proved to be 100 per cent accurate. Latent sensitivity to sulfonamides in apparently healthy people can be revealed by the use of this test. Eight per cent of the subjects who had received previous sulfonamide therapy had become sensitized. It is important to distinguish between toxic sulfonamide rashes and sulfonamide dermatitis. The toxic eruptions include various types of rash: morbilliform, erythematous, scarlatiniform, urticarial, erythema multiforme type and purpuric. These rashes disappear shortly after the drug is discontinued. The explosive eczematous eruptions which fail to disappear rapidly on withdrawal of the drug and generally require prolonged hospitalization are quite different.

British Medical Journal, London

2:449-480 (Sept. 28) 1946

Some Vulgar Errors in Regard to Goiter. J. W. Linnell, G. Keynes and J. E. Piercy.—p. 449.
Asthma in Childhood. T. N. Fisher.—p. 452.
*Perforation of Ileum in Enteric Fever: Notes on 22 Consecutive Cases. G. E. Dunkerley.—p. 454.
Amebiasis in Italy. G. W. Hayward.—p. 457.
Case of Hydatidiform Mole at Age 52. A. H. Charles.—p. 460.

Perforation of Ileum in Enteric Fever.—Dunkerley reports observations on 22 ileal perforations which were operated on at the Kolar Gold Field Hospital in South India between 1935 and 1945. During this period 1,077 cases of enteric fever were treated at this hospital, with a total of 11 perforations. A further 11 perforations occurred among ambulant patients with enteric fever. Perforation occurred usually in the middle of the second week. Sudden and shocklike abdominal pain was the most constant symptom at the onset. In nonambulant cases the time interval between perforation and operation averaged eleven hours. In ambulant cases the exact period could be ascertained in only 4, with extremes of seven and twenty-six hours and an average of thirteen hours. A right paramedian incision was used in all cases. When the correct diagnosis was made before operation a small low incision was made; low for convenience of access, and small to minimize the risk of ventral hernia. The latter complication was a distinct hazard in typhoid perforation, since many wounds became infected. The perforation was repaired with interrupted sutures through all coats transversely and buried by a continuous seromuscular stitch. Omentum was sewn over the repaired site. Wound infection was a troublesome sequel. There were 5 deaths in the 11 ambulant cases and 7 deaths in the nonambulant cases.

Journal of Tropical Medicine and Hygiene, London

49:63-82 (Aug.-Sept.) 1946

*Nonspecific Chemotherapy of Malaria. S. Lorant.—p. 63.
Use of Sigmoidoscope in Diagnosis and Prognosis of Amebic Dysentery. G. A. Rail.—p. 68.
Cephalin-Cholesterol Flocculation Test in Typhoid and Typhus Fevers. J. G. Makari.—p. 70.
Case of Snake Bite. C. E. Lumsden.—p. 72.
Penicillin in Chagas Disease, with Note on Chagas Disease in Ecuador. K. V. Earle.—p. 74.
Tropical Pyomyositis and Its Relation to Deficiency of Vitamin B Complex. D. Brouwer.—p. 77.

Nonspecific Chemotherapy of Malaria.—Lorant reasons that red blood cells containing parasites are altered in their physical condition and assumes that such cells are more easily and selectively attacked by various agents than are normal cells. If the many different antimalarial remedies cause the removal of the plasmodia-containing red cells from the circulating blood, in spite of such different chemical constitutions as that of quinine, arsphenamine and the sulfonamides, this almost unspecific effect has a far reaching unspecific cause. He concludes that every red cell injuring agent is a potential antimalarial factor. It is a consequence of this hypothesis that simple inorganic salts such as sodium thiosulfate may have antimalarial effects. He investigated the effect of sodium thiosulfate and found a prompt response to its administration in 42 out of 79 malaria cases. The hypothesis which assumed the efficacy of sodium thiosulfate is supported by these results.

Lancet, London

2:405-440 (Sept. 21) 1946

Penicillin in Wound Exudates. M. E. Florey, E. C. Turton, M. B. Adelaide and others.—p. 405.
Coronary Occlusion in Young Adults: Review of 50 Cases in Services.* M. Newman.—p. 409.
Deficiency Diseases in Prisoners of War at Changi, Singapore, February 1942-August 1945. R. C. Burgess.—p. 411.
Blood Groups in Bone Marrow. I. A. B. Cathie.—p. 418.

2:441-476 (Sept. 28) 1946

*Perforated Peptic Ulcer Treated Without Operation. H. Taylor.—p. 441.
Sensitivity to Penicillin: Anaphylaxis and Desensitization. W. J. O'Donovan and I. Klorfajn.—p. 444.
*Treatment of Infantile Pellagra: Assessment of Value of Protein Hydrolysates. T. Gillman and J. Gillman.—p. 446.
Early Ovulation. S. Sevitt.—p. 448.
Empirical Tests of Liver Function. M. Maizels.—p. 451.
Perforation of Aorta by Swallowed Bones. M. Haines.—p. 455.

Perforated Peptic Ulcer Treated Without Operation.—In operating on early perforations Taylor repeatedly found that the peritoneal fluid was sterile and that the perforation was sealed off by adhesion to a neighboring viscus. The firmness with which the adherent surfaces were applied to each other suggested that suturing was unnecessary. When similar cases were seen later, the author left the sealed off perforation undisturbed without untoward sequels. The factor common to all of them was that the patient's last meal had been eaten some time before the operation and that the stomach was relatively empty at the time. He reproduced this condition in the early cases by substituting gastric aspiration for operation, relying on the peritoneum to deal with the fluid that had already escaped and on the local adhesion to seal off the perforation. Of 28 patients treated in this way, 24 have made an uneventful recovery, 3 died of causes unconnected with the treatment and 1 died who might have been saved by immediate operation. The technic described is worthy of extended trial in early cases, operation being reserved for cases with gross flooding of the peritoneal cavity or late cases with established peritonitis.

Treatment of Infantile Pellagra.—The Gillmans discuss a syndrome of malnutrition in African infants and children which in its acute form expresses itself as a characteristic dermatosis with varying grades of edema, hypoproteinemia, steatorrhea or diarrhea. The mortality can be very high and is related to the severity of the fatty change in the liver. Gastric extract was the most satisfactory form of treatment, but the lack of constant supplies made it possible to treat only a limited number. While waiting for further supplies they were constrained to use other forms of therapy. Of 10 infants who were treated only with dietetic measures, 6 were improved and 4 died. Of 36 who were treated with diet and vitamins, only 8 improved. Liver extract injections were given to 10, and 7 of these were improved. Of 15 who were treated with oral liver extract and vitamins, only 4 improved. Protein hydrolysate was used in 20 infants, 6 of whom improved. Of the 50 infants given dried stomach, all but 3 improved. This group had the lowest mortality rate of only 6 per cent. Dried stomach plus vitamins was effective in 13 of 20 patients. The authors stress the effectiveness of ventriculin. The addition of vitamin concentrates to ventriculin significantly detracts from its effectiveness. Vitamin concentrates in combination with liver extracts or ventriculin or with a full diet are contraindicated in the treatment of this form of malnutrition. Since protein hydrolysates may result in toxic reactions and rarely promote recovery, the authors consider this form of therapy hazardous.

Schweizerische medizinische Wochenschrift, Basel

76:623-646 (July 13) 1946

*High Incidence of Acute Atrophy of Liver in Basel. H. Staub.—p. 623.
Occurrence of a Skin Disease Hitherto Unknown in Switzerland. Margrit Esser.—p. 625.
Change of Capillary Resistance in High Altitude Climate. F. Wyss and A. Gianoli.—p. 626.
Chronic Callous Ulcer of Gallbladder with Arrosion of Branch of Cystic Artery and Fatal Hemorrhage into Biliary Passages. H. Löffler.—p. 630.
Relations of Adrenal Cortex to Infections. L. Biro.—p. 633.
Therapeutic Experiences with Implantation of Pure Substance of Estrogenic and Androgenic Hormones. C. Müller.—p. 635.
Primary or Secondary Tendon Suture. K. Lenggenhager.—p. 642.

Acute Atrophy of Liver.—Staub says that between May 17 and June 15, 1946, 11 cases of acute or subacute atrophy came to necropsy in Basel. The patients were hospitalized in a jaundiced condition but in spite of rest, protective diet for the liver and the administration of insulin, dextrose, epinephrine, vitamin K and blood plasma, these patients developed hepatic coma and died. The outcome of liver tests, the increased urobilinogen in the liver and the sweetish odor of the expiratory air indicated a parenchymatous lesion of the liver. The entire liver was atrophic, but particularly the left lobe. Cholemic nephroses and signs of hemorrhagic diathesis in the endocardium, myocardium and lung, as well as enteritis, completed the pathologic picture. The author is unable to decide whether this represents a new form of virus hepatitis, whether the virus of epidemic hepatitis has become more malignant or whether a combination of hepatic lesions was responsible. These fatal cases of acute atrophy of the liver did not occur in the course of a widespread epidemic; on the contrary, the number of reported cases of hepatitis was small.

Revista Clínica Española, Madrid

21:379-466 (June 15) 1946. Partial Index

Possibilities and Technic of Roentgenologic Exploration in Early Diagnosis of Gastric Cancer. A. García Barón.—p. 396.
*Cor Pulmonale. M. Bozal Urzay and J. Díaz Opacio.—p. 408.
Studies on the Physiopathology of the Gastrectomized: Early and Systematic Exploration After Resection. J. Fernández Pleyan.—p. 415.

Cor Pulmonale.—Bozal Urzay and Díaz Opacio review 69 cases of chronic cor pulmonale and 2 cases of acute cor pulmonale. The acute cases, both of which were fatal, developed after abdominal intervention. In 35 of the 69 chronic cases occupational disease played a causal role; there were jute and blanket workers, miners and millers. Cough was a constant symptom. Dyspnea and cyanosis were also frequent. Many patients had bradycardia. Arterial tension was usually low. Electrocardiograms manifested bradycardia, low voltage, ventricular complex of small amplitude and of right predominance. Roentgenologic examination revealed enlargement of the heart, particularly of the right side. In patients in whom occupation played a causal role it was deemed necessary to change the working conditions, and this was often followed by favorable results. Change in residence to dry climates of moderate altitudes has also been advised. It is essential that these patients be guarded against intercurrent diseases of the respiratory tract; for obese patients reducing is advised. Medication depends on the presence or absence of decompensation; in the first case there usually also exists hepatomegaly and increase in venous pressure. In these cases purgation, bleeding and a mercurial diuretic combined with an ammoniacal preparation are recommended. Digitalis lanata associated with vitamin C permits the later employment of strophanthin preparations. In patients without decompensation, the respiratory symptoms usually disappear following the improvement of the circulatory condition. Treatment must always be directed first against the causal pulmonary disorder which originates the cor pulmonale.

Revista Cubana de Cardiología, Havana

7:1-48 (Jan., Feb., March) 1946. Partial Index

*Familial Coronary Syndrome. P. González Batle.—p. 29.

Familial Coronary Syndrome.—The subjects of González Batle's report were 3 brothers and a sister, all of whom died from a coronary syndrome at the age of about 60 years. The 4 patients were in prosperous economic condition. All 4 presented arteriosclerosis and hypertension. None had syphilis. Electrocardiograms were studied in 3 of the patients. They showed that the infarct was located in about the same zone in all 3, namely in the anterior wall of the left ventricle. The duration of the disease was seven months in the 3 brothers and about four years in the sister. The role of hereditary predisposition to the disease in these cases is discussed. There was no history of either cardiovascular or coronary disease in the ancestors of the patients.

Revista de Gastroenterol. de Mexico, Mexico, D. F.

10:255-312 (Sept.-Oct.) 1945. Partial Index

Etiopathogenesis of Gastroduodenal Ulcer. C. Véjar Lacave.—p. 255.
*Shock Due to Acute Necrosis of Pancreas After Operation on Bile Tract. J. M. Oviedo Bustos.—p. 287.

Pancreatic Shock.—A man aged 60 presented acute symptoms of biliary duct lithiasis. A hard node was encountered in the head of the pancreas during the operation for the removal of stones and a duodenectomy. Acute shock appeared on the third postoperative day. Blood transfusion and antishock treatment failed. Necropsy showed acute necrosis of the head of the pancreas. Oviedo Bustos calls attention to the frequency of shock after operations on the bile tract. The cause of shock after biliary surgery is either chronic or latent pancreatitis. An early diagnosis of pancreatic shock is of importance. Pancreatic shock can be combated by early blood and plasma transfusion.

Acta Medica Scandinavica, Stockholm

124:417-510 (June 25) 1946

*Treatment of Polycythemia Vera with Large Venesections and Plasma Transfusions. G. Widström and B. Swedberg.—p. 421.
Contribution to Knowledge of Paroxysmal Cold Hemoglobinuria. L. E. Tötterman.—p. 446.
Studies on Serum Proteins in Hepatitis: II. Takata Reactions and Gros Reaction. M. Bjørneboe.—p. 466.
*Age Distribution of Poliomyelitis During Recent Epidemics in Copenhagen. P. Horstmann.—p. 482.
Renal Thresholds: General Remarks. G. Ekehorn.—p. 494.

Large Venesections and Plasma Transfusions in Polycythemia Vera.—Widström and Swedberg describe a new method for treating polycythemic states which was developed by Widström in 1943 and in which venesection is followed by plasma transfusions. As the withdrawn blood is immediately replaced with an adequate volume of plasma, the venesections can be made exceedingly large—well up to 1,500 in less than thirty minutes. This operation may be repeated at short intervals. Thus a rapid normalization of the corpuscle-plasma ratio may be achieved. Like most previously employed methods, this one is chiefly symptomatic; but the elimination of some etiologic factor may also be attained by the rapid breaking of a vicious circle of hyperactive erythropoiesia resulting from bone marrow anoxia caused by the slow circulation of highly viscous polycythemic blood. The patients have noticed this rapid normalization of blood values as an immediate relief of symptoms and have been able to resume their work. So far the authors have used this treatment in treating 7 women and 2 men between 44 and 73 years of age. Eight of these were improved. The authors think that the venesection and plasma transfusion therapy is worth a further trial on a larger number of patients.

Age Distribution of Poliomyelitis During Epidemics in Copenhagen.—Horstmann states that the four large epidemics of poliomyelitis in Copenhagen during the last decade have shown a characteristic age trend of the paralytic patients in that a larger and larger percentage occurred in the higher age groups. In the 1934 epidemic 20 per cent of the paralytic patients were over 15 years old, in 1937 there were 27 per cent, in 1942 there were 44 per cent and in 1944 there were 53 per cent over that age. The nonparalytic patients show no such trend. Latent immunization against poliomyelitis in its paralytic form has decreased during recent years. Attention is drawn to the fact that latent immunization against tuberculosis has decreased during the same period. Both developments might be caused by some change in the hygienic conditions. Some hygienic factor in the treatment of milk during recent years might be the cause of fewer persons being exposed to subclinical infections than previously. The author admits that this assumption is purely hypothetical.

Book Notices

The Modern Treatment of Diabetes Mellitus Including Practical Procedures and Precautionary Measures. By William S. Collens, B.S., M.D., Chief of the Diabetic Clinic, Israel Zion Hospital, Brooklyn, New York, and Louis C. Boas, A.B., M.D., Assistant in the Diabetic Clinic, Israel Zion Hospital. Fabrikoid. Price, $8.50. Pp. 514, with 193 illustrations. Springfield, Illinois: Charles C Thomas, 1946.

This excellent book supplies the modern treatment of diabetes. It shows evidence of keen observation and familiarity with all types of the disease. Illustrations abound and the book is distinctive because of colored illustrations portraying the complications.

The introduction presents several new aspects of the history of diabetes. References to the earlier literature dealing with attempts to secure an extract from the pancreas are carefully recorded. There is an extensive quotation from Banting's story of his discovery as he gave it at the dedicatory exercises of the Lilly Research Laboratories in 1934. All will enjoy rereading his simple account of what he had done.

The diagnostic aspects of diabetes are well presented and in a different manner from the usual routine of polydipsia, polyphagia and polyuria. The chapters on diet are sensible as well as the information about the use of insulin. Hypoglycemia is treated well, and in the description of the symptoms the authors show intimate knowledge of the condition. As for the chapter on coma, much is good, but unfortunately in the enumeration of topics of treatment carbohydrate is placed first and insulin second! Furthermore, the authors apparently do not grasp the point that liberal doses of insulin given in the first two or three hours do more good than if spread out through many hours. They still cling to the use of glucose and even advocate the use of alkali.

The chapter on pregnancy is excellent, but not enough stress is laid on the renal glycosuric element. Unless the physician recognizes this, his patient is apt to be undernourished because so many calories are lost as glucose in the urine. Furthermore, a pregnant diabetic patient is apt to show acidosis unless more than 100 Gm. of carbohydrate is utilized; and one must always be on the watch for this despite the liberal supply of carbohydrate in the diet. Close attention must be paid to promote utilization by spreading the carbohydrate throughout the day and often using insulin several times in the twenty-four hours even if protamine zinc insulin is employed. Care in the administration of insulin to a pregnant diabetic patient is essential because of this renal glycosuric element.

A heating cradle or baker is recommended for the treatment of conditions of the feet. It is even suggested that these bakers be made at home by the patients. The larger and most experienced clinics in peripheral vascular disease would hardly support this because of the frequency of the occurrence of burns on diabetic feet and the desirability in many cases of employing low rather than high temperatures.

Many pages are devoted to analyses of the urine and blood for sugar and the blood for carbon dioxide, the idea in the author's mind evidently being to make everything in the book so plain that he who runs may read. A Collens Diet Calculator is also included with the book as sold.

In general, barring these few notes of criticism, the authors deserve commendation for presenting in attractive form a "practical comprehensive guide for general practitioners who treat diabetic patients."

Précis de virologie médicale: Vaccine variole, herpès, encéphalites, rage, poliomyélite, chorio-méningite, fièvre jaune, psittacose, influenza, maladie de Nicolas et Favre, nature et genèse des ultravirus, techniques. Par C. Levaditi, directeur scientifique de l'Institut Alfred-Fournier, Paris. Paper. Price, 235 francs. Pp. 250, with 142 illustrations Paris: Masson et Cie, 1945.

The importance of filtrable agents in human pathology is obvious. Of the many infectious and contagious diseases of man caused by viruses, a number of the more extensively studied have been selected by the author for brief discussion. These include vaccinia and variola, herpes simplex, some of the encephalitides, rabies, poliomyelitis, yellow fever, psittacosis, influenza and lymphogranuloma venereum. In each case a brief summary is given of the history, clinical and epidemiologic peculiarities, histopathology and immunology of the disease. The factual knowledge of the causative agents is summarized. In addition to these chapters on individual diseases, one section each has been devoted to the nature and origin of viruses and another to biologic and physical technics required for virus research. The individual chapters are concise and clearly written, as one would expect of an author who has contributed so extensively to our knowledge of virus diseases. However, one feels that the absence of references to many important contributions of the two to four years prior to the date of publication is a distinct drawback to the value of this summary. It is obvious that the interruption of exchange of scientific information during the war years is largely responsible for this lack. The book contains numerous illustrations, many of which are good. More explanatory information regarding some of the charts, either in the text or in captions, would have greatly facilitated their interpretation. Although many of the statements are referred to their original authors, no complete bibliography is given. This is all the more disturbing since many errors in spelling are noted, particularly among the British and American names. Also the year of publication, the only further identification of the contribution, is on occasion erroneous.

Neurosis and the Mental Health Services. By C. P. Blacker, M.A., M.D., F.R.C.P. Foreword by Sir Wilson Jameson, K.C.B., M.A., M.D., Chief Medical Officer of the Ministry of Health and the Ministry of Education, London. Oxford Medical Publications. Fabrikoid. Price, $5. Pp. 218, with 1 illustration. New York, London & Toronto: Oxford University Press, 1946.

This study, which started in 1942 as a survey of the effect of the war on the psychiatric outpatient services of England and Wales, has turned out to be far more than its author originally intended. As it stands, it is a comprehensive blueprint of clinic organization, psychiatric education, industrial psychiatry, the relationship of psychiatry to general medicine and the respective roles of the general and the mental hospital. For various reasons so comprehensive a plan could hardly be executed soon in this country; mental health and, indeed, most health matters are state responsibilities, not central, as in England; besides, the medical profession of this country is fortunately not under governmental control. Nevertheless the material presented by Dr. Blacker is valuable as a guide to all who are interested in medical progress and a more effective cross fertilization of psychiatry and the rest of medicine.

Altogether, 216 clinics were studied, 71 per cent of which were held at voluntary hospitals; many of these, however, were staffed from the neighboring mental hospitals. Most had been established since 1929. There was an increase in the number of cases of neurosis treated during the war years, but some of this growth is attributable to factors other than the war, such as a greater readiness on the part of practitioners to use the clinics. Only about 1 case in 30 seen at the clinics was considered a psychiatric air raid casualty.

Dr. Blacker discusses the isolated growth of institutional psychiatry; this has been remedied to a considerable extent by the Mental Treatment Act of 1930, which encouraged the development of outpatient services by the mental hospitals. Child guidance has grown up as an independent specialty, too little tied in either with the rest of psychiatry or with pediatrics. Vocational guidance and much of industrial psychiatry have come from nonmedical psychology. Outpatient care of the neurotic originated in the volutary hospitals, largely as an offshoot of neurology. "There is today a need for an integration of the subject, comprising these new developments. . . . That these provinces should be integrated rather than further separated is the main argument of the recommendations which follow" (p. 40). He goes on: "It would be a grave mistake to embark on big schemes involving extensive new buildings and new organization if adequate personnel were not available. Good men and women count for more than modern buildings and expensive equipment. A good psychiatrist produces good results wherever he does his professional work." Here is food for thought for our monument builders!

The author would see instituted promptly programs of training for psychiatrists, nurses, social workers and occupational therapists, with a wider instruction of general medical men in psychiatry. In other words, the general practitioner should be ready to do much of his own psychiatric follow-up. The mental hospitals should be more closely linked to the general hospitals, and the two should function jointly in providing mental health services. The mental hospitals might well use part time physicians (in the manner, perhaps, being developed by our veterans' hospitals); they would operate more outpatient and child guidance services, assist in the field of industrial psychiatry and rehabilitation and as aids to the court in dealing with delinquency. Admission to mental hospitals should be made even less formal than at present, without certification or commitment.

The volume is closely packed with facts and suggestions and is therefore difficult to condense within a short abstract. There is a vast amount of material in it which can be read with profit by all who come into contact with the growing field of psychiatry.

Experimental Hypertension. By William Goldring and others. Being the Results of a Conference on This Subject Held by the Section of Biology of The New York Academy of Sciences February 9 and 10, 1945, New York City. Volume III, Special Publications of the New York Academy of Sciences. Roy Waldo Miner, editor. Cloth. Price, $3.75. Pp. 179, with illustrations. New York, 1946.

This volume reports a conference on experimental hypertension held under the auspices of the Section on Biology of the New York Academy of Sciences in February 1945. This is one of a number of excellent symposiums which the academy has sponsored from time to time on subjects of interest to the medical and allied professions.

The symposium reported in this volume deals largely with recent advances in the field of experimental renal hypertension, although brief considerations of experimental neurogenic and other hypertensions are included. The symposium includes papers by investigators representing nine different laboratories (two in South America) which have contributed importantly to experimental renal hypertension in recent years. Unfortunately the war precluded the participation of British and Belgian groups. Beginning with the introductory presentation by Dr. Harry Goldblatt, whose classic demonstration of experimental renal hypertension in 1934 stimulated the splendid investigative interest in this field ever since, each paper of the conference was searchingly discussed; these discussions are accurately recorded in the volume except for their inadvertent omission from two of the papers.

The book summarizes excellently the present status of our knowledge of experimental renal hypertension. In addition to recounting reported recent advances, problems still awaiting solution are outlined. The reader not intimately familiar with the field may be surprised to learn that authorities are not agreed that renal ischemia is necessary for the production of experimental renal hypertension by arterial constriction or that the renin-hypertensin (angiotonin) mechanism is definitely responsible for the maintenance of experimental renal hypertension. The reader will also learn of evidence for alternative theories seeking to explain the pathogenic mechanism of experimental renal hypertension on the basis of increased production of pressor amines or decreased release of a depressor principle by the kidney. Even the generally accepted humoral mechanism of pathogenesis is questioned for late experimental renal hypertension by one laboratory group.

The reported results of therapeutic experiments with various renal extracts and certain marine oils afford hope that a more specific antihypertensive therapy may eventually be made available for trial in man. There is included a limited discussion of the current divergent points of view regarding the pathogenic relationship of experimental renal hypertension to essential hypertension.

This book should be read by all investigators in the fields of experimental and clinical hypertension and by those physicians and others who will appreciate a moving account of sometimes brilliant and more often painstaking experimental elucidation of the fundamental mechanisms of hypertension and certain aspects of cardiovascular and renal pathophysiology.

Anesthesia in General Practice. By Stuart C. Cullen, M.D., Head of Division of Anesthesiology, Department of Surgery, State University of Iowa Hospitals, Iowa City, Iowa. Cloth. Price, $3.50. Pp. 260, with 34 illustrations. Chicago. Year Book Publishers, Inc., 1946.

This concise, clearly written textbook is an excellent compendium of the fundamental considerations of present day practice in the rapidly growing field of anesthesiology. According to the preface, it "is to be construed not as a complete text in anesthesiology but rather as a manual useful to the medical student, the part-time anesthetist and others who may be called upon to employ depressant drugs, alleviate respiratory depression or obstruction and treat hypoxia or shock." The logical progression in the development of a rational basis for the understanding of fundamental problems makes easy, enjoyable reading. The twelve chapters, representing outline topics on which the context is developed, include preanesthetic medication, airway, agents and technics of inhalation anesthesia, spinal and regional analgesia, signs of anesthesia, choice of anesthetic agent and technic, preanesthetic and postanesthetic care of the patient, and explosion hazards. Curare is discussed with regard to its use as an adjunct to inhalation anesthesia. Especially fine is the chapter on recognition and treatment of shock. A chapter on oxygen therapy includes discussion of the normal physiology of the oxygen transport system of the body and the many circulatory and respiratory factors which may interfere and cause hypoxia. Repetition is infrequent except where effectively and deliberately used to emphasize important points. Controversial material is kept to a minimum. Effective and judicious use has been made of a few charts and some good teaching cartoons. An excellent book, well suited to the purpose for which it was written.

Technique of Psychoanalytic Therapy. By Sandor Lorand M.D., Member of the Faculty of the New York Psychoanalytic Institute, New York. Fabrikoid. Price, $3.50. Pp. 251. New York: International Universities Press, 1946.

This book is an outgrowth of a series of lectures given by the author to physicians in training at the New York and Philadelphia Psychoanalytic Institutes. As such, it constitutes a well and simply written introduction to the technical procedures and simple technical problems that may arise in the transference neuroses. It contains numerous suggestions for the handling of patients from the first contact to the termination of the analysis. The young analyst will be gratified at the concrete pointers offered on such subjects as interpretation, dream analysis and countertransference. The author emphasizes that his methods in treatment follow closely those of his teacher, Ferenczi. His technic in therapy constantly points up his active participation in the analytic situation. Many practicing analysts may not agree with his methods; however, the author believes that more progress can be anticipated by following his example. Of particular value to the beginner is the author's chapter on dream analysis. One cannot emphasize sufficiently the pitfalls of one's personal association in the interpretation of dream material. Only the patient can lead one to the correct solution. The chapter on countertransference, though not by any means exhaustive, gives a clearcut indication of the numerous factors involved in the therapist's attitude toward the patient and the therapeutic hour. Ample case material is cited throughout the book to illustrate the author's point of view and technic. All the material is directed to the young physician in psychoanalytic practice and is not meant for the general practitioner.

Experiments on the Presence of Carcinogenic Substances in Human Surroundings. By Theodore van Schelven. Paper. Price, $1. Pp. 16. Kosmos Publishing Company, Keizersgracht 133, Amsterdam, 1946.

In this small monograph the author describes attempts to demonstrate carcinogenic substances in ordinary daily human surroundings as possible causes for cancer. Benzene extracts of house dusts, textiles and other common objects were not carcinogenic when tested in mice. Similar extracts of ordinary foods were also inactive, but extracts from the black, charred crusts induced tumors. The author attempts to correlate the incidence of cancers with racial dietary and other habits. The monograph has no bibliography. It loses much of its value because of failure to correlate the work with numerous experiments along the same lines performed by others, including countrymen of the author.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

SAFETY OF ANESTHETICS

To the Editor:—Please give statistics on the relative safety of ether, ethylene and pentothal sodium for general anesthesia.

L. J. Alger, M.D., Grand Forks, N. D.

Answer.—Statistical studies comparing the safety of the various anesthetic agents have never been entirely satisfactory. The argument regarding the comparative safety of ether and chloroform continued until the end of the nineteenth century. Its settlement, if it may be considered settled at present, was not made on the basis of statistics but rather as a result of experimental studies on laboratory animals. Reasons for the unsatisfactory nature of statistical evaluation of the anesthetic drugs are numerous. One of the most important is the influence of the manner of administration. The dose of agents, the technics used and the early recognition and treatment of undesirable side effects have more to do with safety than does the choice of agent.

To compare ether, ethylene and pentothal sodium is unsatisfactory because they are useful for different purposes. Ethylene, for instance, is distinctly less potent than ether and would therefore be used for less extensive and severe operations on patients often in better physical condition.

N. A. Gillespie has reported statistical studies dealing with deaths during anesthesia (*Anesthesiology* **5**:113 [March] 1944; *Brit. J. Anaesth.* **19**:1 [Jan.] 1944). In a general hospital over a ten year period he reported deaths in the operating room as follows:

	Number of Cases	Deaths During Anesthesia	Per Cent
Ether	9,741	12	0.123
Pentothal	1,568	2	0.1275
Ethylene	1,172	0	

In the same hospital over a four year period he found deaths to have occurred during residence in the hospital as follows:

	Number of Cases	Deaths in the Hospital	Per Cent
Ether	5,203	123	2.3
Pentothal	1,382	24	1.7
Ethylene	224	3	1.34

According to these figures ethylene appears to be the safest agent, and yet careful reading of Gillespie's papers convinces one that no such conclusion can be drawn.

ANALOGY OF COWPER'S AND BARTHOLIN'S GLANDS

To the Editor:—Is Cowper's gland in the male analogous to Bartholin's gland in the female?

I. J. Schwartz, M.D., Conroe, Texas.

Answer.—Cowper's gland in the male and Bartholin's gland in the female have a similar origin from the urogenital sinus of the embryo and hence are regarded as homologous structures. Analogous glands are usually considered to have similar function. Since little is known of the functions of Bartholin's gland (which may not persist after formation in many females of lower mammals) and not much more concerning the function of Cowper's gland, the strict analogy may be questioned. In general terms the glands are frequently regarded as analogous.

INJECTION OF FURUNCLES WITH PENICILLIN

To the Editor:—A recent circular from a drug house discussed the injection of penicillin into the "core" of boils and carbuncles. Is this good therapy or is there danger in injecting into an area of cellulitis?

M. I. Steckler, M.D., Los Angeles.

Answer.—It has been demonstrated by Rose and Hurwitz (*New England J. Med.* **234**:291, 1946) that the injection of penicillin locally, i. e. well outside the center of local infections, is of definite value in limiting and overcoming local infections. They did not recommend the injection of penicillin into the "core" of boils (furuncle with cellulitis) and carbuncles. Concentrations of 10,000 to 60,000 units per cubic centimeter were used and the injections were made once a day for one to seven days. It should be emphasized that the injections are made outside the center of infection.

MEASUREMENTS OF THE UTERUS

To the Editor:—References in the literature have not been found as to the size of the uterus in different pathologic conditions and intrauterine pregnancy. Most obstetricians and gynecologists use such terms as "size of a 5 to 7 week pregnancy" or "size of an orange." Are there any recorded exact measurements of the uterus in centimeters or other measures that can be universally accepted? At present this factor seems to be highly relative and subject to vast individual differences of opinion.

Harold Broady, M.D., New York.

Answer.—There are no uniform measurements of the size of the uterus at different months of pregnancy, because the number of uteri with a fetus and placenta in situ which have been removed at different stages of pregnancy have been too few to permit scientific study. Hence reliance has been placed on the estimated size of uteri at different months. These measurements are really estimates and vary somewhat with different individuals. Further, there are inaccuracies due to differences in the amount of fat in the abdominal wall, variations in the amount of urine in the bladder, differences in the amount of liquor amnii in the uterus, the presence of twins, differences in shape of the uterus and other factors. For this reason the height of the uterus has been expressed as "half way to the umbilicus," "at the umbilicus," "so many centimeters above the umbilicus" and so on, but the umbilicus varies in position. MacDonald and Spiegelberg each measured the distance from the upper margin of the symphysis pubis to determine the duration of pregnancy, and Ahlfeld enunciated the rule "To obtain the fetal age divide the fetal length by 5 during the last five months of pregnancy and extract the square root of the fetal length before the fifth month. At term the fetus measures about 50 cm., at eight months 40 cm., at four months 16 cm., and so on."

No one method of determining the size of a uterus for the estimation of the duration of a pregnancy is reliable. However, those who have had considerable experience in obstetrics can estimate the duration of pregnancy with a high degree of accuracy by making a bimanual examination; but they would have difficulty in giving exact measurements of the uteri they felt. Nevertheless, in the interests of scientific accuracy perhaps it would be best to give up comparing myomatous uteri to pregnant uteri for size and instead try to estimate the height, width and depth of the myomatous uteri.

POLLEN CONTENT IN LOS ANGELES

To the Editor:—1. What is the pollen content of the air at different seasons in Los Angeles? 2. Do the areas surrounding Los Angeles have a similar pollen count? 3. A patient sensitive to ragweed, dust, molds and grass wishes to change her residence from Illinois to Los Angeles. Would the prolonged warm weather tend to increase her allergic symptoms? Her allergy is well controlled by desensitization in Illinois. Could there be reasonable assurance that fairly good results would be obtained from desensitization in Los Angeles?

M.D., Illinois.

Answer.—1. Extensive data are not available on the pollen content of the air in the immediate city of Los Angeles and none whatever from surrounding areas closer than San Diego. Durham has carried out a study on the atmospheric incidence of Alternaria and Hormodendrum spores from March until November inclusive and a one season pollen study through the months of July, August, September and October. The fungus spore records show small but continuous amounts of Alternaria and Hormodendrum spores in the air throughout the period surveyed, with indications that these are probably continuous through the rest of the year. The ragweed figures as compared with Chicago showed a total seasonal count for Los Angeles of about 2.5 per cent of the average for Chicago. The amounts of grass pollen and miscellaneous chenopod-amaranth pollens were even less than those of the ragweed. Only a trace of sage pollen was found.

2. According to the southern California botanic survey of Piness, Miller and McMinn the incidence of the principal types of pollen offenders of the area surrounding Los Angeles differs greatly from that of other parts of southern California, particularly the inland valleys. Details of this survey can be obtained from the published report.

3. The prolonged warm weather of Los Angeles will not in any way increase the suffering of a ragweed sensitive person. In fact, it is altogether unlikely that a ragweed victim from Chicago will experience any difficulty whatever from ragweed exposure in the Los Angeles area. The slight exposure to these pollens in Los Angeles is much less than that in most of the northern hay fever resorts of Canada, New England and the Great Lakes area. Whether the outdoor dust of southern California is any more irritating to the membranes of an allergic person than the outdoor dust of Chicago has not been determined. Nor has any comparison been made of the effect of local house dusts in one area as compared with another. The grass pollen season in southern California occurs at a different season and continues longer than in Illinois. Bermuda grass

pollen is particularly active. This and other grasses begin to shed their pollen in the Los Angeles area as early as April and continue more or less through September. Even though the amount of grass pollen in the air is relatively small, a considerable amount of allergic difficulty is experienced from local exposure because Bermuda grass is widely used for lawns. Nevertheless, desensitization treatment is just as effective in the hands of experienced allergists in one area as in another. It would seem that the patient should benefit greatly by the change.

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Piness, George; Miller, Hyman, and McMinn, H. E.: Botanical Survey of Southern California in Relation to the Study of Allergic Diseases, *Bull. Southern Acad. Sc.* **25:** 37, 1926.

TREATMENT OF ERYTHEMA NODOSUM

To the Editor:—A woman aged 25 had acute rheumatic fever five years ago following a streptococcic sore throat. At that time there were multiple erythematous nodules on the anterior and posterior surfaces of both legs. These nodules recurred six months ago and periodically become better and worse regardless of treatment. Several days after the intramuscular injection of 300,000 units of penicillin in oil there was an acute exacerbation of the nodules followed by a remission. Two weeks later the nodules again appeared in the same locations. The injection of sodium penicillin solution directly into one of the nodules has been considered. Please discuss the treatment of erythema nodosum occurring as a complication of rheumatic fever.

Robert R. Geer, M.D., Grand Island, Neb.

ANSWER.—Erythema nodosum is a complication of many other conditions apart from rheumatic fever. In a condition in which the difficulty recurred over a period of five years it would seem likely that some other etiologic factor was involved. Tuberculosis is frequently the cause of such a condition and in the case described in the query should be diligently sought for. Infection of the paranasal sinuses not infrequently has been the cause. Mycotic infections have recently been found to produce this type of reaction. This is particularly true of coccidioidomycosis, which is now known to be endemic in certain parts of California. Syphilis has been blamed, but this cause seems questionable. As the nodes themselves are thought to be allergic in nature it is highly doubtful that the injection of an antibiotic would be of any value. The patient should be kept in bed during the active state and salicylates may be given. In stubborn cases x-ray treatments have been of value, but these are only palliative.

PRODUCTION OF PIGMENTATION IN NEOPLASTIC CELLS

To the Editor:—Please discuss the treatment of patients with malignant melanoma by chemicals administered internally in the hope of promoting development of pigmentation within the neoplastic cells so that their rate of proliferation is diminished.

Richard L. Sutton Jr., M.D., Kansas City, Mo.

ANSWER.—So far as known, experiments have not been recorded in which patients with malignant melanoma have been treated with chemicals administered internally to promote the development of pigmentation in the neoplastic cells so that their rate of proliferation will be diminished. Certain experiments have been made on animals with compounds which inhibit the action of certain enzymes concerned in the formation of pigment in the skin. It was hoped by these experiments to prove that, if the formation of pigment could be hindered, perhaps the cells would be overcome by the natural defensive forces of the body. Unfortunately the experiments were not successful in showing any degree of inhibition of the growth of experimental pigmented melanoma in animals.

MEDICATION AND JAUNDICE

To the Editor:—Can the daily use of phenobarbital or epsom salt over a period of several years possibly produce jaundice?

M. Alexander, D.D.S., Woodside, L. I., N. Y.

ANSWER.—Prolonged use of barbiturates has not been reported to cause jaundice. However, a large dose of barbiturate may further injure an already damaged liver and result in jaundice. It has been reported in cases of fatal or nearly fatal barbiturate poisoning.

Little or no systemic action of magnesium is seen when epsom salt is taken by mouth, because absorption is slow and excretion is rapid. In cases of renal injury in which there is interference with magnesium excretion some systemic action may be noted if a large dose is taken. This consists of depression of the nervous system and a curare-like action and is manifested by analgesia, anesthesia, muscular paresis and respiratory depression. Jaundice has not been reported.

TREATMENT OF THYROID ADENOMA

To the Editor:—Please discuss the treatment of simple unilateral nodular goiter. What is the recurrence rate of these so-called adenomas after surgical removal? Is there any medical treatment for nodular goiter?

M.D., New York.

ANSWER.—Since nonsurgical treatment will not cause disappearance of nodules in the thyroid gland (adenomas), the only choice is watchful waiting or surgical removal. By neglecting an adenomatous goiter the patient assumes three potential risks:

First, there is the danger of further growth of the nodule or nodules, an action which may eventually cause pressure symptoms or increase the difficulty of surgical intervention.

Second, hyperthyroidism may develop. Symptoms of toxicity associated with nodular goiter develop insidiously, and commonly the patient does not realize there is any change in his condition until after the development of visceral damage. The proportion of patients with benign nodular goiter who subsequently are afflicted with hyperthyroidism is not definitely known, but it is estimated to be at least 30 per cent.

Third, there is the possibility that an early malignant process may be present, or the subsequent development of malignancy may be overlooked. It is estimated that, of all the nodular goiters operated on, about 5 per cent prove to be malignant. Since there are no accurate criteria for judgment as to early malignancy of the thyroid gland, every patient who neglects a nodular goiter must assume this risk.

The risk of surgical removal of a nontoxic adenomatous goiter under ideal conditions is today exceedingly small, being less than 0.3 per cent, and the incidence of recurrence after operation on adult patients is almost negligible (most so-called recurrences of nodular goiter represent, in effect, growth of tumors that were not removed at operation). Therefore, when the hazard of neglect of an adenomatous goiter is compared with the hazard of operation, it would appear that neglect is accompanied by a greater risk than is surgical operation.

INFLUENZA VACCINE FOR CHILDREN

To the Editor:—Please discuss the use of influenza virus vaccine in children from 12 to 36 months of age to protect against repeated common colds and influenza. What is the specific dosage for this treatment?

H. E. Byrd, M.D., Carthage, Mo.

ANSWER.—Influenza vaccine is not expected to protect against the common cold; it is presumably specific for influenza A and influenza B. From observations in children it appears that 0.3 to 0.5 cc. given in the fall would be the proper procedure.

RAPIDITY OF PROCAINE HYDROCHLORIDE ANESTHESIA

To the Editor:—In using procaine by infiltration, does one get most rapid anesthesia by using a hypotonic solution, an isotonic solution or a hypertonic solution?

Lyman C. Blair, M.D., Houston, Texas.

ANSWER.—In using procaine by infiltration one gets most rapid anesthesia by using an isotonic solution.

SPLENECTOMY AND SUSCEPTIBILITY TO INFECTION

To the Editor:—In the answer to "Relation of Splenectomy and Susceptibility to Infection" (Queries and Minor Notes, The Journal, Sept. 28, 1946, p. 250) the serious complication of thrombophlebitis of the veins of the portal system is not mentioned. This complication, though uncommon, probably occurs more often in splenectomy than in any other abdominal operation. Hanrahan and Vincent, in Lewis's Practice of Surgery, present one series of 71 cases in which 2 deaths were due to this complication and another series of 54 splenectomies in which this complication was probably the cause of death in 3 cases.

George L. Nardi, M.D., Massachusetts General Hospital, Boston.

ALLERGY TO SODIUM CHLORIDE

To the Editor:—I should like to comment on the answer to the query "Allergy to Sodium Chloride," which appeared in The Journal, Sept. 21, 1946. Allergy to sodium chloride exists, as demonstrated by the observations and investigations of Strouse, Vallery-Radot, Gutmann and Urbach (Urbach and Gottlieb: Allergy, New York, Grune and Stratton, p. 314). Hypersensitivity to cane sugar was described by different authors (ibid., p. 313).

Erich Urbach, M.D., Philadelphia.

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CONTRACEPTION MASKING STERILITY AND INFERTILITY

Tubal and Seminal Factors in 1,000 Cases

I. C. RUBIN, M.D.
WITH THE ASSISTANCE OF D. ZAKIN, M.D.
New York

In the many years since contraception was first ventured on as a topic for discussion at medical meetings, I have had occasion to call attention to the fact that this practice would inevitably be resorted to by some—perhaps by many—married couples who were actually or potentially infertile. This observation was based on early work with uterotubal insufflation, in which several women who had used contraceptive methods proved to have a pathologic barrier to conception in the tubes which rendered preventive measures actually unnecessary. The barrier might well have been present at the time of, or shortly after, marriage and was incidentally masked by the contraceptive practice.

Many similar cases have since come under personal observation in a large number of women who have sought relief for primary sterility. But this difficulty has not been confined to childless women. There were an increasing number of women who, having employed contraception for varying lengths of time after one childbirth or after one or several spontaneous or induced abortions, decided to try to become pregnant again and were chagrined at their failure. Apparently something had happened in the interim to render the woman, or rather the couple, less fertile.

A question that naturally arises is to what extent, if any, contraception actually impairs the chances of future conception. This is difficult to determine except from large statistical analyses which are as yet unavailable. Since contraception is so commonly practiced, it would be of value to find a trustworthy statement recorded in each obstetric history as to the method and duration of the practice with respect to past and present pregnancies. In the future, this item should be included in all obstetric histories. It would give data that could throw much light on the question of possible deleterious effects of contraception. As far as I am aware, this aspect has not heretofore been adequately studied. However, in a recent publication[1] I took occasion to note the interval of time elapsing between the cessation of contraception and the onset of pregnancy in 590 women who became gravid after treatment for sterility. One hundred and ninety of the 590 women had used contraceptive precautions at some time during their married life. In 97, a little over half, an interval of at least two years had elapsed since they stopped contraception. Fifty-four, approximately one third, had not used precautions for three to seven years before they consulted their physician. Only one fifth of this group (39 patients) had ceased the use of precautions for one year before insufflation and before they became pregnant. Although these statistics are based on a small group of patients they nevertheless indicate the fact that an appreciable number of couples resort to contraception needlessly, because they are potentially infertile for varying lengths of time or have sterility factors which may or may not be amenable to corrective treatment.

As contraception is closely related to sterility, the methods and duration of this practice are matters which have received particular attention in the medical history of sterile women. But here too, although possibly it has an important etiologic relationship, the fact is not universally recorded. In my own practice this item had not previously been systematically taken into account, but it has become more and more a matter of routine questioning in the past ten years. In the last 1,000 consecutive cases of sterility on which the present study is based, there were only 33 histories without reference to contraception in the primary sterility group and 59 in the secondary sterility group. The omission of this reference in the medical history emphasizes, in general, the importance of complete statistical data. However, the data presented in these 1,000 cases give a fair estimate of the sterility factors in a group that did not practice contraception and in one in which contraception was resorted to for varying lengths of time.

It is not the purpose of this paper to enter into the pros and cons of the unfavorable influence of contraception on fertility but, rather, to call attention to the fact that many couples are obviously employing contraceptive precautions needlessly. Moreover, the important fact is that by so doing they lose much valuable time, if they desire to have children at any period of their married life. I am not concerned with couples who are unalterably opposed to offspring for special reasons of their own, although every one knows of instances in which there has been a change of heart in this respect. Some of these people present pathetic and tragic figures when they ask for help which is no longer available. If they had been aware from the onset of the possibility of hopeless infertility, it is not unlikely that a large number would have foresworn contraception in favor of seeking medical help to improve their chances to have a family.

In the present paper my records of the last 1,000 consecutive cases of sterility have been analyzed to determine to what extent reproductive stigmas were

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Dr. Zakin was aided by the Dr. Hiram N. Vineberg grant in Gynecology.

Read before the Section on Obstetrics and Gynecology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

[1] Rubin, I. C.: Therapeutical Aspects of Uterotubal Insufflation in Sterility, Am. J. Obst. & Gynec. 50: 621-640 (Dec.) 1945.

present in the group of women who practiced contraception as compared to the group who did not use contraception. There were 711 cases of primary sterility and 289 cases of secondary sterility. As the problems are somewhat different in these two general groups, the etiologic factors have been tabulated separately.

Although the tubal factor was first considered in connection with the question of contraception and potential infertility, it was deemed desirable to consider several other deterrent factors in the same connection

The cases are discussed under the classifications of primary and secondary sterility In the primary sterility group are included women who have never conceived; in the second sterility group, women who have been pregnant once or several times As a rule in the latter group the conception had terminated in abortion, ectopic pregnancy or stillbirth Some had had an only child.

TABLE 1—*Contraceptive Data*

	Primary Sterility, 678 of 711 Cases		Secondary Sterility, 230 of 289 Cases	
	1 Contraception Employed in 466 Cases	2 Contraception Not Employed in 212 Cases	3 Contraception Employed in 120 Cases	4 Contraception Not Employed in 110 Cases
A Pelvic organ abnormalities	...	(212 cases examined)	(120 cases examined)	(110 cases examined)
Hypoplasia	32	6	.	1
Fibroid uterus	26	10	6	7
Cervical stenosis	21	21	7	7
Retroversion	19	7	2	1
Cervical wick	9	3	3	2
Adnexal mass	6	..	2	2
Infantile cervix	6	2		..
Miscellaneous	14	10	1	8
Total	133 (28.5%)	59 (27.8%)	21 (17.5%)	28 (25.5%)
B Endocrine dysfunction	(466 cases examined)	(212 cases examined)	(120 cases examined)	(110 cases examined)
Menstrual absence or irregularity	19	21	4	2
Hypothyroidism	15	2	2	1
Total	34 (7.3%)	23 (10.8%)	6 (5.0%)	3 (2.7%)
C Seminal inadequacy				
(a) By Huhner test	(323 cases examined)	(127 cases examined)	(72 cases examined)	(57 cases examined)
Azoospermia, necrospermia or decided oligospermia	163 (50.5%)	63 (49.6%)	39 (54.2%)	19 (33.3%)
(b) By jar specimen	(199 cases examined)	(78 cases examined)	(43 cases examined)	(35 cases examined)
Azoospermia, necrospermia or decided oligospermia	92 (46.2%)	46 (59.0%)	22 (51.2%)	11 (31.4%)
D Tubal impairment	(353 cases examined)	(162 cases examined)	(85 cases examined)	(81 cases examined)
Nonpatency	75	41	13	24
Stricture or adhesions	70	20	19	13
Spasm	37	8	8	3
Total	182 (51.6%)	69 (42.6%)	40 (47.1%)	40 (49.4%)
E Etiologic factors summarized				
Pelvic organ abnormalities	133	59	21	28
Endocrine dysfunction	34	23	6	3
Seminal inadequacy (Huhner)	163	63	39	19
Tubal impairment	182	69	40	40
Times	512 (in 374 couples or 80.3%)	214 (in 72 couples or 81.1%)	106 (in 83 couples or 69.2%)	90 (in 77 couples or 70.0%)

PRIMARY STERILITY

In the primary sterility series there were 466 couples who had employed contraception during the first part of married life and 212 couples who had natural intercourse throughout marriage. Information in regard to contraception was lacking in 33 cases. Included are data on 27 women who had been married twice; contraceptive data related only to their present marriage are considered.

In the examination of the records of the 466 couples who had employed contraception, the major sterility factors were deduced from a simple workup. This consisted of physical examination of the wife and husband, uterotubal insufflation, examination of semen and determination of the basal metabolic rate when indicated.

The etiologic factors comprised four categories: (1) abnormality of the pelvic organs, (2) endocrine dysfunction, (3) seminal inadequacy and (4) tubal impairment. Bimanual examination, with routine use of the vaginal speculum, sufficed in practically all instances to determine the presence or absence of gross pelvic abnormalities which might have an etiologic bearing on the infertility. In a few instances hysterography was used. The evaluation of endocrine dysfunction was limited in this study to consideration of: (*a*) ovarian dysfunction as manifested by amenorrhea, hypomenorrhea, oligomenorrhea, menorrhagia and metrorrhagia or combinations thereof and (*b*), more specifically, hypothyroidism, as demonstrated by a diminished basal metabolic rate.

In most instances, an evaluation of the semen was derived from the Huhner test When necessary, the diagnosis of seminal inadequacy was checked by examination of one or several samples of semen brought in a small glass container. The tubal status was determined by kymographic uterotubal insufflation with carbon dioxide gas (Rubin test).

Abnormalities of Pelvic Organs—Abnormalities of the pelvic organs or diseased conditions capable of diminishing fertility were found in 133 women (28 5 per cent). As shown in table 1*A*, the most frequent abnormalities were uterine hypoplasia, uterine fibromyomas, cervical stenosis and uterine retroversion. The 26 women with fibroid tumors presented a surgical problem in which the question of uterine myomectomy versus hysterectomy had to be considered. In a number of them fibroid tumors had developed of such size and distribution as to indicate hysterectomy. Most of the women were 30 or more years of age.

Endocrine Dysfunction.—There were 19 women with menstrual difficulties and 15 with hypothyroidism, making a total of 34, or 7.3 per cent, with endocrine dysfunction (table 1 *B*, column 1). Had a more exhaustive study of endocrine stigmas been undertaken, the percentage might have been higher. Endocrine stigmas in the male have not been specifically investigated.

Seminal Inadequacy.—In evaluating seminal inadequacy, I struck a snag which is appreciated by every one who has endeavored to define what is normal or adequate seminal output and composition and what is abnormal. I have tried to get an idea of normal semen by studying the results of the Huhner test and the unmixed specimen in 83 cases in which pregnancy was recorded in the followup of the present series.

By the Huhner test only an approximate estimate may be made as to the number of spermatozoa deposited in the vagina, because they are clouded by epithelial cells in most specimens. For the same reason they are not amenable to determination in the counting chamber. It has therefore been customary to get an approximate estimate of the numbers of spermatozoa present by counting them in the high power microscopic field. In this study the unmixed specimen of semen has been estimated in the same way. I have attempted by a formula to convert the number of spermatozoa as seen in the high power field into the number per cubic centimeter, but the results have been too divergent for reliance. However, I have been impressed by the fact that in an appreciable number of cases the Huhner test showed 10 spermatozoa or less per high power field, despite which pregnancy has taken place.

These observations lead to the conclusion that an estimate of the potential fertility of the male cannot be based solely on the number of spermatozoa found in the vaginal or cervical secretions. As to a specimen brought in a glass container, one can only determine an approximate total of sperm content and note morphologic characteristics. As long as one cannot recognize definitely the particular type of spermatozoa which ultimately fertilizes the ovum, one cannot be sure which specimen may or may not be adequate for fertility. In the absence of such precise criteria, one nevertheless recognizes azoospermia and extreme degrees of oligospermia as unmistakable causes of male sterility. Absence of spermatozoa by the Huhner test, even if found on several occasions, is not always conclusive evidence of male sterility. Normal spermatozoa may be demonstrable in the specimen of semen itself. Bimanual examination and that with the speculum enable one to determine whether intromission of the penis into the vagina is anatomically possible. If the vagina appears normal in this respect, hypospadias, other penile defects or impotence is to be looked for in the husband. Apparently absence of motility of the spermatozoa in the vaginal or cervical secretions, or in both, one or two hours after coitus is not an absolute index of infertility, because 47 of 101 women in this series have become pregnant despite repeated evidence of nonmotility.

In many cases, however, the satisfactory nature of the semen could be determined by finding adequate numbers of motile spermatozoa in the vagina and cervix. In negative and doubtful cases the jar specimen of semen was examined. Of 199 such samples of semen, 92 (46.2 per cent) were inadequate due to azoospermia or definite oligospermia (table 1 *C*, column 1).

Tubal Impairment.—Tubal impairment was noted (*a*) when the tubes were nonpatent, (*b*) when they showed diminished patency and function due to tubal stricture or peritubal adhesions and (*c*) when the tubes were spastic.

In the group of 466 women with primary sterility who practiced contraception, the tubal status was determined in 353 cases: 182 (51.6 per cent) showed evidence of tubal impairment; 75 (21.3 per cent) had nonpatent tubes by several tests; 70 (19.8 per cent) partially patent tubes, and 37 (10.5 per cent) spastic tubes (table 1 *D*, column 1). Thus, without attempting to draw specific differences relative to voluntary and involuntary sterility, the fact remains that over 50 per cent of the women tested in this series who practiced contraception were handicapped by tubal nonpatency or impaired tubal function. In how many instances this obtained at the time of marriage and to what extent it was acquired after marriage is conjectural. There was a lack of important data in the records to clarify this point.

Infertility Factors.—In the group of 466 couples complaining of primary sterility, important factors were found a total of 512 times (table 1 *E*, column 1). In most of the couples under investigation only one causal factor was present; in others there were two or three causal factors. The total number of couples having one or more factors was 374 (80.3 per cent). It should be emphasized that the high incidence of sterility factors found in this analysis may be due in part to the fact that many of the cases either had been of long standing or had proved refractory to all previous therapeutic measures.

The seminal and tubal factors are the ones most frequently encountered. Thus, of the 374 couples with demonstrable abnormalities, tubal inadequacy or seminal inadequacy, or both, was met in 279 couples (74.6 per cent). This observation emphasizes the importance of a thorough examination of the semen and the tubal status. It goes without saying that in any precontraceptive fertility study of the married couple or the couple contemplating marriage, examination is necessarily limited to the jar specimen, since the Huhner test carries with it the possibility of conception. It should also be noted that a prognostic evaluation cannot be made of the specific fertility of any given specimen of semen. At the present time one can speak only of the morphologic characteristics, of estimated numbers of spermatozoa and of the degree and type of motility. Actual insemination repeated over a certain length of time is necessary in order to determine its compatibility and ultimate fertility.

In the group of 212 couples who did not use contraceptives, the incidence of pelvic abnormalities—59, or 27.8 per cent, endocrine dysfunction—23, or 10.8 per cent, seminal inadequacy—63, or 49.6 per cent, and tubal impairment—69, or 42.6 per cent, was essentially the same as in the contraceptive group (table 1 *A*, *B*, *C* and *D*, column 2). These factors were found 214 times in 172 couples, or 81.1 per cent (table 1*E*, column 2).

Because of limitation of space only a few examples of the factors discovered by the routine investigation are presented in the following reports of cases:

Case 1.—*Observations.*—S. Z., a woman aged 30, had been married five years, had practiced contraception for four years and had involuntary sterility for one year. There had been hypomenorrhea ever since delayed menarche at the age of 17. The physical examination was essentially noncontributory. The basal metabolic rate was − 20 per cent on one occasion and − 15 per cent while the patient was receiving 2 grains (0.13 Gm.) of thyroid daily. Results of the Huhner test, examination of semen and uterotubal insufflation were normal.

Comment.—In this case hypomenorrhea long before marriage was an indication of lowered fertility, and hypothyroidism was another factor which prevented conception; both were masked by the use of contraceptives.

Case 2.—*Observations.*—E. H., a woman aged 29, had been married four years, had practiced contraception for two years and had involuntary sterility for two years. The menstrual history was normal except that during the past two years there had been occasional episodes of metrorrhagia. Kymographic uterotubal insufflation with auscultation determined nonpatency of the left tube and stricture of the right tube due to peritubal adhesions. The husband's semen was moderately oligospermic with reduced motility and vitality. Because of the recurrence of uterine bleeding, hysterography with Viscorayopaque [2] was done, and a uterine polyp was demonstrated.

Comment.—Important deterrents in this case were: nonpatency of left tube, stricture of the right tube, uterine polyp and oligospermia.

Case 3.—*Observations.*—L. G., a woman aged 35, had been married eight years, had used contraceptive methods for three years and had involuntary sterility for five years. Menstruation was normal except for moderate dysmenorrhea. There was hypoplasia of the uterus and the cervix. The husband's semen was normal by the Huhner test. Uterotubal insufflation showed bilateral tubal nonpatency. Hysterosalpingography with Viscorayopaque confirmed the diagnosis of uterine hypoplasia and tubal nonpatency. The tubal closure was at the fimbriated ends

Comment.—Bilateral tubal nonpatency and uterine hypoplasia. Pregnancy was prevented by the closed tubes, while another deterrent was the hypoplastic uterus. Contraception was therefore unnecessary and acted as a mask.

Case 4.—*Observations.*—M. O., a woman aged 28, had been married four years, had practiced contraception for three years and had involuntary sterility for one year. The menstrual history was normal. Physical examination revealed a small, short hypoplastic cervix. There was bilateral tubal obstruction on two occasions. However, on the third attempt, tubal patency was established by the insufflation method. The patient became pregnant shortly afterward.

Comment.—This patient needed treatment to make her capable of becoming pregnant, and she was fortunate in conceiving. The factor of tubal obstruction made contraception unnecessary.

Case 5.—*Observations.*—E. S., a woman aged 32, had been married nine years, had practiced contraception for eight years and had involuntary sterility for one year. The menses had been irregular since menarche at the age of 15½ and had decreased in duration and frequency until amenorrhea set in at the age of 21, continuing until the present. The uterus was small, the cervix was reduced to a little slender nipple-like structure, and the vaginal fornices were absent. The pubic hair was sparse. The skin of the face was wrinkled, and the patient appeared much older than her age. Uterotubal insufflation indicated tubal patency at an extremely low level of tonicity, and tubal contractions occurred infrequently. The husband's semen was normal. After several months' treatment with estrogen and progesterone, there was some increase in uterine size and some development of the endometrium as manifested by the appearance of staining. Stimulating roentgen therapy to the pituitary and the ovaries was recommended.

Comment.—This patient was not a good prospect for maternity and certainly one who did not necessarily need contraceptives. It would have been well to try earlier to restore her endocrine balance.

Case 6.—*Observations.*—C. D., a woman aged 27, had been married five years, had practiced contraception for two years and had involuntary sterility for three years. The menstrual history and physical examination revealed essentially normal conditions except for stricture of the cervix. There was azoospermia by the Huhner test and by examination of the unmixed specimen. Uterotubal insufflation demonstrated bilateral tubal closure.

Comment.—It is impossible to say just how long this closure had been present, but obviously an earlier examination had been indicated, and contraceptive measures had been useless and needless.

Case 7.—*Observations.*—E. J., a woman aged 28, had been married three and one-half years, had practiced contraception for two years and had involuntary sterility for one and one-half years. The menses were normal. Physical examination revealed a fibroid uterus in retroversion. The husband's semen was adequate in amount and in the number of spermatozoa. Uterotubal insufflation showed that the tubes, though patent, had atypical contractility. Shortly after insufflation the patient conceived.

Comment.—This patient came for consultation fairly soon after involuntary sterility was observed and was fortunate enough to conceive after treatment.

SECONDARY STERILITY

The smaller group of 289 cases of secondary sterility included 120 couples who had practiced contraception, 110 who had not and 59 concerning whom the contraceptive data were not noted. There were 22 women with premarital pregnancies (all terminating in induced abortion) and 38 women with multiple marriages (5 were married three times and 33 twice). Contraceptive data relating only to the present marriage were considered in this study.

In the group of 120 couples who had practiced contraception, abnormalities of the pelvic organs occurred in 21, or 17.5 per cent, endocrine dysfunction in 6, or 5 per cent, seminal inadequacy in 39, or 54.3 per cent, and tubal impairment in 40, or 47.1 per cent (table 1 *A*, *B*, *C* and *D*, column 3). These factors were found 106 times in 83 couples, or 69.2 per cent (table 1 *E*, column 3). Of these 83 couples with one or more demonstrable causes for sterility, tubal or seminal or both factors were present in 68, or 81.9 per cent. In secondary sterility, as in primary, the importance of the seminal and tubal status is immediately apparent.

In the group of 110 couples who had not used contraception, the incidence of demonstrable factors was approximately the same as in the contraceptive group: pelvic abnormalities in 28, or 25.5 per cent, endocrine dysfunction in 3, or 2.7 per cent, seminal inadequacy in 19, or 33.3 per cent, and tubal impairment in 40, or 49.4 per cent (table 1 *A*, *B*, *C* and *D*, column 4). These factors occurred 20 times in 77 couples, or 70 per cent (table 1 *E*, column 4).

Examples of the combination of sterility factors in relation to contraception as met in secondary sterility are presented in the following reports of cases:

Case 1.—*Observations.*—C. S., a woman aged 26, had, years earlier, become pregnant and contracted gonorrhea as the result of rape. The pregnancy was terminated. A laparotomy was performed two years later, presumably because of adnexal infection. The right tube, part of the left tube and parts of both ovaries were resected. She subsequently married, at the age of 20. Contraception was practiced four years, after which a two year period of involuntary sterility ensued. Uterotubal insufflation demonstrated bilateral tubal nonpatency.

Comment.—The use of contraceptives in this case, in view of the previous history, was absurd.

Case 2.—*Observations.*—S. P., a woman aged 31, who had been married nine years, had a full term normal delivery eight years ago. Contraceptive precautions were then taken for six years. After two years of involuntary sterility, medical advice was sought. Uterotubal insufflation showed that the tubes were patent. Physical examination was negative except for moderate retroversion of the uterus. The Huhner test demonstrated absence of spermatozoa in the vagina and cervix. Seminal responsibility was confirmed by demonstrating azoospermia in the jar specimen.

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[2] Viscorayopaque is a crystalloid iodine preparation (diethanolamine salt of 2,4-dioxo-3-iodo-6-methyl tetrahydropyridine acetic acid) made viscous by adding polyvinyl alcohol. It is prepared by Hoffman LaRoche, Nutley, N. J.

Comment.—This case illustrates in clear relief what a boon early examination of both partners would have been. Also, it illustrates the necessity of not taking the fertility of the male for granted even after one child had been produced.

CASE 3.—*Observations.*—A. S., a woman aged 30, who had been married ten years, had a full term normal delivery seven years ago. A five year period of contraception was followed by involuntary sterility for two years. Menses had always been infrequent, occurring every two to eight months before marriage, every two to four months after marriage and every two months since the birth of the child. The basal metabolic rate had been — 40 per cent; and, following thyroid medication, it varied from — 10 per cent to — 20 per cent. Physical examination was essentially noncontributory. The Huhner test and examination of the unmixed specimen showed the semen to be normal. Uterotubal insufflation demonstrated tubal patency; however, the kymograph recorded atypical tubal contractions. Because of diminished pituitary-ovarian function, stimulating roentgen ray therapy to the pituitary and the ovaries was recommended.

Comment.—The lowered fertility of women with pronounced delays in the menstrual habit is well known. Contraceptives serve only to reduce it still further.

CASE 4.—*Observations.*—J. B., a woman aged 30, who had been married seven and one-half years, had a laparotomy one year after marriage for a left tubal pregnancy. Contraception for six years was followed by involuntary sterility of one year's duration. Physical examination was noncontributory except for sharp anteflexion of the uterus and nontender thickening of the left adnexal region. Uterotubal insufflation demonstrated bilateral tubal nonpatency on three occasions. At laparotomy, the right tube, which was completely obliterated, was resected, and the right ovary was transplanted into the uterine cornual opening. The left tube was obstructed about 1 inch (2.54 cm.) from its uterine end and was resected at this point.

Comment.—The needlessness of six years of contraception is obvious in this case, in view of the bilateral tubal blockage.

CASE 5.—*Observations.*—M. R., a woman aged 32, had been married ten years and had practiced contraception for six years. The patient became gravid two years ago but had a miscarriage at three months. Since then, conception has not recurred despite constant efforts in that direction. The menstrual history, physical examination and tubal status were normal. The Huhner test and repeated examinations of the jar specimens of semen showed decided oligospermia with greatly diminished motility and a high percentage of abnormal forms.

Comment.—This couple owed its infertility to seminal inadequacy, which would have responded to treatment, and valuable time was lost by the practice of contraception for six years.

COMMENT

The question that arises from the data herein presented is whether it should be considered necessary to determine the potential fertility of couples seeking contraceptive advice before such advice is proffered. Although physical examination does not reveal the factors responsible for sterility in every case, these factors are demonstrable in most instances. In this series, from one half to two thirds of the childless couples employing contraception were shown to have one or more causes for their infertility; many of these causes were clearly indicative.

The nature and severity of the causal factors show wide variation, and the degree of reduction in fertility corresponds to the possibility of applying therapeutic measures. Even without treatment, some women with reduced tubal patency and function due to peritubal adhesions become pregnant after a variable lapse of time; this applies to men who become fertile after having had oligospermia. On the other hand, despite the most painstaking and prolonged therapeutic measures, such conditions as tubal obstruction and azoospermia represent barriers to conception which may not be amenable even to surgical intervention.

Without doubt, however, the sooner the causal factor is determined and eliminated, the better the prognosis. In those couples in whom the factor is of an absolute nature and not susceptible to therapeutic relief—in short, the hopeless cases—it is better for the couple to know the facts as soon after marriage as possible. Unnecessary contraception may be immediately discontinued, stock may be taken of the situation, psychologic adjustments may be made and, if desired, steps may be taken for ultimate adoption of a child, or impregnation by a donor may be considered.

In most instances the loss of fertility is not absolute but relative. In such cases, early treatment is much more likely to achieve its end than that which delayed for several years in the mistaken belief that pregnancy will necessarily ensue within a short time after contraception is discontinued. If some couples do not elect to institute therapy immediately, they should at least be made aware of a possible lessening of fertility. Such awareness on the part of the general public might lead some couples to dispense with contraception from the beginning of their married lives until they prove whether or not the union is fertile. If they choose to elect parenthood thereafter they will not present the sad spectacle of frustrated childless matings.

TABLE 2.—*Contraceptive Methods Employed in Cases of Sterility*

	Primary, 466 Cases	Secondary, 120 Cases
Contraceptive Method		
Condom	174	31
Diaphragm	82	20
Condom-diaphragm	42	3
Withdrawal	11	6
Douche	7	4
Rhythm	5	..
Suppository	..	2
Jelly or cream	3	1
Not specified	142	53
Total	466	120

I am not unmindful of the possibility that some marriages would not be consummated if the partners were made cognizant by a premarital examination of their combined inability to have children, should they choose to know the facts before marriage. But this result may be offset in the long run by forestalling divorces, which eventually break up such unions after painful experiences and continual upheavals. On the other hand, the adoption of children presents a third alternative for those couples who are ideally mated otherwise and who would make good foster parents.

Not all newly married couples who employ contraception appear to seek medical advice concerning method and technic. In this series of 466 couples with primary sterility who used contraception, the most frequently used device was the condom (table 2). However, of 324 cases in which the methods were recorded, 129 (diaphragm 82, rhythm 5, condom-diaphragm 42), or practically 40 per cent, employed a device or method that necessitated medical instruction. When advice is sought the importance of determining potential fertility before instituting contraception can be suggested. When it is not sought, advantage may be taken at the time of medical consultation for other reasons to call attention to the desirability of determining potential fertility in instances in which married couples practice contraception of their own accord.

A somewhat smaller percentage of couples with secondary sterility than of those with primary sterility employ contraception. Of those habituated to this practice, fewer consult physicians for contraceptive advice. In this series, 67 of 120 couples with secondary sterility who took artificial precautions since their last pregnancy gave reliable data. Of these, 23, or 34.3 per cent, consulted a physician in regard to the device to be employed (table 2).

The relatively infrequent resort to contraception in secondary sterility is probably due to the fact that, in most instances, previous gestations did not result in living children. In the 289 couples with secondary sterility there were 428 previous pregnancies (table 3), resulting in only 133 living children (31.1 per cent). Abortions, induced and spontaneous, totaled 247.

If a woman has given birth to one or more living children, the chances are greatly in favor of continued fertility, particularly if childbirth was uncomplicated. However, if there has been a nonviable issue, such as abortion and ectopic pregnancy, a prompt and thorough attempt should be made to determine the threshold of fertility of the couple in order to institute necessary corrective measures at the earliest possible moment. It may be proper in certain instances to stress the importance of such an investigation, even though the medical consultation has been sought for reasons other than sterility.

TABLE 3.—*Issue of Previous Pregnancies in 289 Cases of Secondary Sterility*

Full term living child	133	(31.1%)
Induced abortion	130	
Spontaneous abortion	108	
Ectopic	25	
Neonatal	15	
Stillbirth	8	
	428	

The sterilizing effect of induced abortions apparently has not been sufficiently appreciated. In a paper dealing with this question I have pointed out that tubal obstruction is more frequently encountered after induced abortions than after spontaneous miscarriages and other conditions.

Apart from the theoretic question of whether better babies are born of younger parents, they may be a safe investment against the uncertainties attendant on prolonged contraception. Whether or not couples wish to limit their families is not considered in this paper, for it is not the concern of the physician, however interested he may be in the religious, moral, economic or political aspect of this question. From the medical, pathologic and biologic point of view, however, it is important to call attention in general to the fact that many married couples lose precious time by contraverting Nature's purpose of propagating the race, thus forfeiting what is unquestionably the most precious possession in life, namely, the ability to create new life. For this reason persons contemplating marriage with the natural instinct of parenthood will do well to consult their physician as to whether they are potentially capable of having babies; or, in the event they do not choose the prophylactic examination, they will be wise to do so as soon after marriage as possible in order to discover the 15 per cent chance or more of sterile mating.

The premarital Wassermann examination was originally established to protect innocent persons from infection, but it has the further virtue of protecting the health of the unborn child. All agree concerning the validity of this procedure that is now legalized in many states. Without venturing into the controversial matter of premarital examination to determine the potential fertility of persons, it would, if they chose to take advantage of such an examination, have the virtue of preventing sterile matings in the first place and of pointing out what corrective measures may be necessary to enhance their prospects of having children. In all this discussion it must be constantly remembered that conception can occur only after a mating. In most instances a period of trial is necessary to determine the combined fertility of a married couple. Medically, one can determine only whether the mates have or have not obstacles to conception. It has been said that 85 per cent of all marriages, by and large, prove to be fruitful. This figure, however, may have been true for past generations. It is possible that sterility has increased in the last two or three decades.

CONCLUSION

1. A large number of sterile couples who practice contraception do so in the mistaken belief that they can conceive at will.
2. My records show that 70 per cent to 80 per cent of sterile couples present factors unfavorable to fertility.
3. The tubal factor was the most important deterrent to conception in from 47 per cent to 51 per cent of the sterile women employing contraceptives.
4. Seminal inadequacy was established in from 50 per cent to 54 per cent of those using contraceptives.
5. It is manifestly desirable for couples who wish to have children at some later date to be examined for potential fertility before they resort to the use of contraceptives. They may save themselves much needless trouble, and they will have a better chance of getting babies when they want them.
6. Contraceptives often act as a mask for concealed and unsuspected infertility of men and women. Recognition of this fact can lead to the early correction of factors that militate against fertility in those who desire children.

ABSTRACT OF DISCUSSION

Dr. Sheldon Payne, Los Angeles: One is impressed by the fact that most couples seeking contraceptive advice plan to have children at some future time yet have never questioned their fertility. According to our most reliable statistics, probably at least 15 per cent of these couples will be unable to have children. Early diagnosis and a program planned for treatment, adoption of a child or whatever is indicated would seem a great asset. Persons contemplating marriage are coming to doctors in greater numbers than ever before. Most states require premarital blood tests of the prospective partners, and many insist on complete physical examinations. A large group of patients also seeks marital and contraceptive advice. With a few additions to the usual routine of questioning and examination, many cases of infertility can be determined. The diagnosis of male infertility is comparatively simple and often overlooked. Dr. Tyler and I reported a series of infertile couples observed by us during the past two years, selected because they had supposedly exhaustive studies elsewhere and adequate treatment without success. Sixty-seven per cent of these husbands were found below par by our standards; of these, 32 per cent responded sufficiently to treatment and their wives became pregnant. Now that more is known concerning factors in male infertility and better standards are applied, it is interesting to note the apparently increased incidence of male infertility—seminal inadequacy in from 50 to 54 per cent, in Dr. Rubin's report. Although ejaculated specimens from the normal male may vary considerably from day to day, if count, motility, viability, the percentage of abnormal forms and so on are considered, one usually finds such specimens adequate for determining which men will require further study. Most men will not object to such an examination, which may be incorporated in the premarital examination. Those proved inadequate are usually most anxious for further investigation. Early evaluation of infertility in women, with their more complicated and hidden mechanisms, is more difficult. Much can be gained by history and physical examination. However, it is often difficult to obtain cooperation much further unless the woman has some menstrual disturbance or is confronted with undesired infertility. With all our testing of both men and women, we can only express an opinion regarding their relative fertility. The real test comes with unobstructed mating and time.

Dr. Pendleton Tompkins, San Francisco: Dr. Rubin has raised the question whether we are giving contraceptive advice to persons who are already predestined to be infertile. Dr. Payne has just said that about 15 per cent of couples are infertile. It therefore follows that if contraceptive advice is given to 100 newly married couples, in 15 instances such advice is unnecessary. The problem, then, is to determine which of these 100 couples do not require the advice. Sterility studies indicate that men are responsible for infertility in about 40 per cent of the cases. Translating that figure to these 15 infertile couples, we find fault in the man in about 6 cases. Some of these faults, such as hypospadias, might have been discovered beforehand by anatomic examination. Suspicion of endocrine abnormality is often aroused by a simple physical examination and, if necessary, can be proved by laboratory tests. When one is dealing with newly married couples, the history is apt to be more reliable than at any other time in the lives of those couples. A history of gonorrhea or of trauma, either surgical or accidental, is important, and particularly a history of the prospective father's occupation. Many occupations heretofore not recognized as influencing fertility have an important significance. X-ray workers, workers with high frequency currents, men who drive taxicabs or trucks, men who sit for long hours in one position and pilots of planes are among the group whose occupation is suspected. By history and physical examination, 4 or 6 of the 100 prospective fathers might be infertile and might require further study. In the wives, the history of gonorrhea or appendectomy, particularly if hospitalization was prolonged or if drains were inserted, is likewise important. Tuberculosis is important because it may lead to tubal closure. So are previous pregnancies, whether ending in abortion, miscarriage or otherwise. Dr. Rubin did not imply that contraceptive practices decreased fertility. Nevertheless, there are dangerous contraceptive devices which are still in use and which ought to be ostracized and rendered illegal. I refer to all contraceptive devices which are inserted into the cervical canal or into the uterus. These are dangerous and should never be employed in medical practice today.

Dr. Eric M. Matsner, New York: It is important to break down further the types of contraceptives that were used by the group; also to know whether, and in what percentage of cases, the contraceptives utilized were prescribed by a physician after a thorough pelvic examination. The point I want to stress is the implication that the use of contraceptives in a certain percentage of these cases led to future infertility or sterility. I think it is important to determine what percentage of those cases can be attributed to the use of contraceptives. It has been my experience that the premarital or early marital examination is an ideal opportunity to discover any of the stigmas which Dr. Rubin has mentioned. For this reason, I consider it desirable that all premarital or early marital examinations include a thorough pelvic examination. I should like to ask Dr. Rubin what he would advise in this respect and also the technics he advocates as a means of child-spacing after the delivery of one or more children.

Dr. I. C. Rubin, New York: I am not an expert on child-spacing. I don't know much about it. As a matter of fact, I have not advised contraception to the extent he has. I work on the opposite pole. I am interested in raising fertility and in lessening sterility. I am not interested in what type of contraception is used. I pointed out that various types have been used. What they are, whether they are ineffective or even dangerous is not the point. When they are dangerous, they of course reduce fertility by their own effect, but I was speaking particularly of the general masking of infertility by the use of contraception, which wastes valuable time and deludes couples into a false sense of security, from which they awaken one day with a jolt and with great chagrin. I have seen few women who can conceive at will following the use of contraception. They are the exceptions.

THE PROBLEM OF PEPTIC ULCER

A. C. IVY, M.D., Ph.D.
Chicago

For humanitarian and economic reasons the problem of peptic ulcer[1] has been and is a great challenge to medical science.

The problem of peptic ulcer challenges medical science today because, among the chronic diseases, it ranks tenth as a cause of death and twelfth as a cause of days lost from work.[14] Among a group of employees of the Metropolitan Life Insurance Co., consisting of approximately an equal number of men (2,125) and women (2,155) above the age of 30 years, the incidence of proved cases was 2.4 per cent during a period of 10 years.[15] If this incidence prevails in the nation's population, there are approximately 1.5 million people in the United States above the age of 30 in whom peptic ulcers develop during a period of 10 years. It has been estimated from evidence obtained at necropsy that from 5 to 12 per cent of the population become afflicted with peptic ulcer during a modern lifetime. Not all may consult a physician, however, because of the mild character of their symptoms.

NATURAL HISTORY

Certain points regarding the natural history of peptic ulcer command serious consideration in relation to the cause and prevention of the disease.

The Changed Incidence of Peptic Ulcer According to Necropsy Records.—One of the mysteries of the natural history of peptic ulcer is the rarity with which pathologists reported the occurrence of duodenal ulcer during the nineteenth century. For example, Brinton in 1856 reviewed 7,226 necropsy reports and concluded that gastric ulcer occurred in approximately 5 per cent of all persons and omitted any statistics on duodenal ulcer.[16] Perry and Shaw[17] in 1893 reviewed 17,652 necropsy records from 1826 to 1892 and recorded an incidence of 0.4 per cent (the total of all types of duodenal ulcer was 0.8 per cent; 149 cases) for duodenal ulcer. At the turn of this century it was commonly taught that the necropsy ratio of gastric to duodenal ulcer was as high

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From the Department of Physiology, Northwestern University Medical School.

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Because of lack of space, this article is abbreviated in The Journal by omission of the historical portion of the text and footnotes 1*a* to 13 inclusive. The complete article will appear in the author's reprints.

[1] The expression "peptic ulcer" is used in a generic sense in this paper and refers to any benign and nonspecific ulcer that is located in those portions of the alimentary tract which happen to be bathed with gastric juice.

[14] National Health Survey, Sickness and Medical Care Series, National Institute of Health, *Bulletin 6*, United States Public Health Service, Washington, D. C., 1938 (1939 revision).

[15] Jennison, J.: Am. J. M. Sc. **196:** 654, 1938.

[16] Brinton, W.: On the Pathology, Symptoms and Treatment of Ulcer of the Stomach, London, J. Churchill, 1857; Diseases of the Stomach, ibid., 1859.

[17] Perry, E. A., and Shaw, L. E.: Guy's Hosp. Rep. **50:** 171, 1893.

as 20:1 (Hurst[18] and Hauser[19]). But even before the turn of this century, necropsy reports from Germany indicated that the incidence of duodenal ulcer was increasing. In 1914 to 1921 two German reports on 3,058 necropsies recorded an incidence of 6.9 per cent for acute and chronic gastric ulcer and 5.3 per cent for acute and chronic duodenal ulcer.[20] In England in 1929 Hurst and Stewart[18] found at necropsy an incidence of 4.33 per cent for chronic gastric ulcer or scars and 5.75 per cent for chronic duodenal ulcer or scars. The same change has occurred in the United States. In Philadelphia the incidence of duodenal ulcer at necropsy increased during the period of 1920 to 1937.[21] As late as 1936 and 1937 necropsy records in Philadelphia and Chicago showed that, though acute and chronic ulcers predominated in the stomach, chronic ulcers were equally distributed between the stomach and the duodenum[22] (table 1).

Thus, at the present time necropsy records in the United States and England indicate that chronic gastric and duodenal ulcers occur with the same frequency. If one accepts Brinton's figure of a 5 per cent necropsy incidence of peptic ulcer in 1850 and the Chicago figure of 5.2 per cent (among white persons) for the 1929 to 1936 period, then an increase in the incidence of peptic ulcer has not occurred during the last hundred years in northern Europe and the United States. It would then appear that during the past hundred years the location of about half the peptic ulcers which occur has shifted from the stomach to the duodenum.

Another mystery in the natural history of peptic ulcer, according to the necropsy records, is the apparent reversal of the sex ratio of the incidence of the disease. During the middle of the last century, when gastric ulcer apparently predominated, the disease developed chiefly in women. Today, when the necropsy incidence of chronic peptic ulcer is about equally divided between the stomach and the duodenum, peptic ulcer occurs chiefly in men in both locations (table 1).

TABLE 1—*Incidence of Peptic Ulcer in Autopsies According to Sex and Location*

Sex	No. Autopsies per Yr	No. Ulcers per Yr.	%	Site	Total Ulcers	Ulcers per Yr.	Comment
Philadelphia General Hospital: Autopsies, 22,956 * 13 Years: 1920 1932							
Male	591	11.7	2.00	Stom.	148	11.4	32% chronic
Female	446	6.6	1.48	Duod	89	6.0	21% chronic
5 Years: 1933 1937							
Male	1,081	44.2	4.10	Stom.	178	35.6	38% chronic
Female	815	18.2	2.20	Duod.	134	26.8	31% chronic
Chicago Cook County Hospital: Autopsies, 9,171 † 8 Years: 1929 1936 (Ulcers and Scars)							
Male	677	39.6	5.85	Stom.	230	29.0	29% chronic
Female	470	13.7	2.92	Duod.	197	25.0	42% chronic

* Fifty-seven per cent males and † 59 per cent males by communication from the respective departments of pathology.

Changing Incidence as Indicated by Mortality Records.—Many of the necropsy reports are subject to various criticisms. However, the shifts they manifest in the location and sex ratio is supported by the mortality statistics.

Since 1900 in the United States the death rate per 100,000 from peptic ulcer has increased from 2.7 to 6.8 in 1943.[23] An approximate plateau was reached in 1935. It is remarkable that since 1920 the death rate in men for both gastric and duodenal ulcer has increased, whereas that for women has decreased[24] (chart 1). This fact is remarkable because it shows that the death rate from peptic ulcer since 1920 cannot be ascribed justifiably to the increased recognition of the disease, which is particularly true of duodenal ulcer. Peptic ulcer is certainly as easily diagnosed in women as in men. Further, this change occurred during a period in which deaths from cancer of the stomach increased in both sexes.[24a]

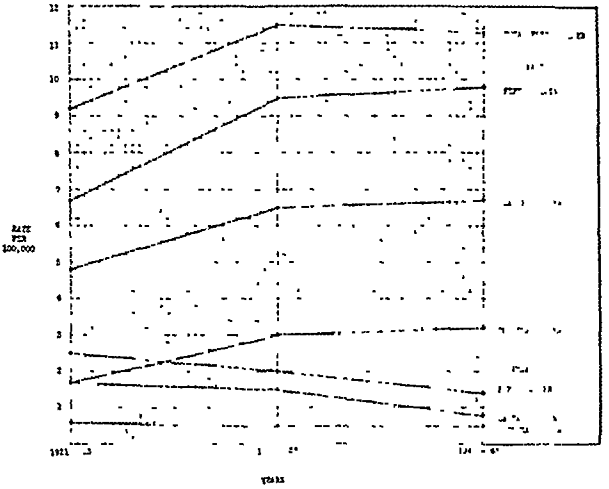

Chart 1.—Trend of mortality rate from peptic ulcer, Metropolitan Life Insurance Company

Change in Incidence Based on Clinical Experience.—The apparent increase in the incidence of duodenal ulcer and the shift in the sex ratio of peptic ulcer also conforms with clinical experience. In the early years of this century Moynihan and W. J. and C. H. Mayo, as is well known, reported a greater clinical incidence of duodenal than of gastric ulcer. Later Jennison[15] in a group of employees of the Metropolitan Life Insurance Co. observed a duodenal to gastric ulcer ratio of 13.6:1. Emery and Monroe[25] reported a duodenal to gastric ulcer ratio of 5.6:1 and a male to female ratio of 5.5:1. Balfour and Eusterman[26] found a duodenal to gastric ulcer ratio of 12:1 and a male to female ratio of 4:1.

The ratios in table 2 show that the clinical observations on the location and the sex distribution of peptic ulcer check well with the mortality statistics, except in one regard, namely, that more people die from gastric than from duodenal ulcer. This exception shows only that, as a rule, gastric perforation and hemorrhage is more lethal than duodenal, since the clinical reports indicate that 4 duodenal perforations occur for 1 gastric perforation and that little difference exists between duodenal and gastric ulcers in their tendency to bleed.[27]

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[18] Hurst, A. F., and Stewart, M. J.: Gastric and Duodenal Ulcer, New York, Oxford University Press, 1929.

[19] Hauser, G., in Henke, F., and Lubarsch, O.: Handbuch der speziellen pathologischen Anatomie und Histologie, Berlin, Julius Springer, 1926, vol. 4, pt. 1.

[20] Hart, C.: Mitt. a. d. Grenzgeb. d. Med. u. Chir. **31:** 350, 1919. Holzweissig, M.: ibid. **35:** 16, 1922.

[21] Gordon, J. S., and Manning, J. J.: Am. J. M. Sc. **202:** 423, 1941.

[22] Portis, S. A., and Jaffe, R. H.: A Study of Peptic Ulcer Based on Necropsy Records, J. A. M. A. **110:** 6 (Jan. 1) 1938. Gordon.[21]

[23] Vital Statistics, Special Reports, United States Department of Commerce and Labor, Bureau of the Census, Sept. 10, 1942, vol. 16, no. 31, p. 125.

[24] (*a*) United States Department of Commerce and Labor, Bureau of the Census, Mortality Statistics, 1920-1945. (*b*) Sex Differences in Mortality Trends, Statist. Bull., Metrop. Life Insur. Co (no. 9) **26:** 5, 1945.

[25] Emery, E. S, Jr., and Monroe, R. T.: Peptic Ulcer: Nature and Treatment Based on Study of 1,435 Cases, Arch. Int. Med. **55:** 271 (Feb.) 1935.

[26] Eusterman, G. B., and Balfour, D. C.: The Stomach and Duodenum, Philadelphia, W. B. Saunders Company, 1936.

Comment: The cause of the shift in the location and sex ratio of peptic ulcer is not subject to explanation at this time. Medical history records that diseases have been overlooked or underestimated until they were publicized. However, duodenal ulcer was well publicized by 1920, and some important etiologic factor must have been concerned in the increased incidence of this form of the disease in men since 1920 in contrast to the absence of an increase in women.

Age and Peptic Ulcer.—Another fact in the natural history of peptic ulcer must be considered as being related to the question of the cause of gastric ulcer, namely, the relation of age to the incidence of the disease.

Ninety per cent of the cases of peptic ulcer are first diagnosed after the age of 20. This may be considered an argument against certain types of infection being concerned, since children and adolescents are as prone to infectious diseases as adults. Foci of infection may be more common in the adult, but the evidence is inadequate. Children and adolescents are, however, relatively free from vascular disease. A point of interest in relation to the acid theory of the genesis of ulcer is that the gastric secretory response to a test meal does not reach maturity until the age of 18 in men and 20 in women.[28] The factor of "sustained anxiety," or responsibility, is more prevalent after the age of 20. The possibility of a combination of these factors must be considered, including some subtle effect of the sex hormones.[29]

Seasonal Variation in the Incidence of Peptic Ulcer.—There is a general impression that peptic ulcer tends to occur or recur during the autumn and spring months. This was emphasized by Hütter.[30] Little by way of satisfactory clinical data has been offered in support of this impression. However, the impression is confirmed by the mortality data of the United States Bureau of Census[24a] for each month of the year for a five year period, presented as a graph in chart 2. It is of interest to note that the curve of mortality graphed by months, except for the month of February, conforms with that of vascular disease, nephritis and pneumonia.

Table 2.—*Clinical Observations on the Location and Sex Distribution of Peptic Ulcer Compared with Mortality Statistics*

Source of Data	Duodenal-Gastric Ulcer Ratio	Chronic Peptic Ulcers Male-Female Ratio
Clinical	D. U. : G. U.	M. : F.
[illegible]	13.6 : 1	4.5 : 1
[illegible]	5.6 : 1	5.5 : 1
[illegible]	12.0 : 1	4.0 : 1
Mortality	D. U. : G. U.	M. : F.
U. S. Bur. Census 1937-1938..	1 : 2.9	3 : 1
Males....................	1 : 2.7	
Females.................	1 : 3.6	
Source	**Sex Ratio of Gastric Ulcer**	**Sex Ratio of Duodenal Ulcer**
Clinical	M. : F.	M. : F.
Balfour and Eusterman.....	3.9 : 1	4.0 : 1
Mortality		
U. S. Bur. Census 1937-1938..	2.9 : 1	3.6 : 1

Comment: The seasonal variation in the incidence of peptic ulcer must have some etiologic significance. It has been explained as being due to the incidence of upper respiratory infections. If this is a factor it cannot be the only one responsible, since many more persons have respiratory infections than peptic ulcer. There is a lack of good evidence to show that gastric secretion is less during the summer months. However, I know from an extensive experience that hot weather decreases the gastric secretory response of dogs to a test meal. It may be due to summer vacations or to a decrease in the drive to accomplish, which is believed to be incident to the late spring and summer months. Some subtle metabolic derangement has been suspected but not named.[25] Riggs, Boles, Reinhold and Shore[31] found a decrease in blood pressure, pulse rate, hemoglobin, hematocrit and serum proteins during the summer months in 40 subjects who were studied for one year. A similar study of gastric secretion would yield valuable information.

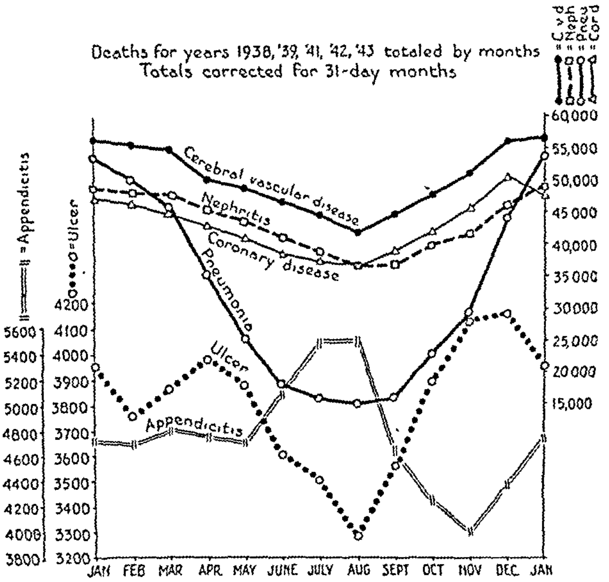

Chart 2.—Deaths in the United States of America from various diseases, grouped by months.

Recurrences.—The most discouraging characteristic of peptic ulcer is its likelihood to recur. This was known to the early students of the disease[32] who warned against the conclusion that immediate good results indicate a permanent "cure." Greenough and Joslin as early as 1899 reported a recurrence in 47 per cent of patients who had apparently been cured. The recurrence rate reported in the most recent articles which present data are shown in table 3.

Emery and Monroe[18] have presented data regarding the factors which appeared to be concerned in causing a recurrence. They found that "often no cause is assignable." In 1,279 patients studied in this regard, the recurrences seemed to be due to fatigue in 334, emotional excitement in 258 and infections (upper respiratory) in 167 patients. In the remaining 40 per cent no exciting factor appeared to be concerned. More data of this type are needed. Most of the data on emotional factors submitted recently have come from a consideration of the personality characteristics of the patient with ulcer than from the extent to which an emotional disturbance is the cause of the recurrence.

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[27] Bockus, H. L.: Gastroenterology, Philadelphia, W. B. Saunders Company, 1943, vol. 1. Eusterman and Balfour.[23]

[28] Vanzant, F. R.; Alvarez, W. C.; Eusterman, G. B.; Dunn, H. L., and Berkson, J.: Normal Range of Gastric Acidity from Youth to Old Age, Arch. Int. Med. **49**: 345 (March) 1932. Sagal, Z.; Marks, J. A., and Kantor, J. L.: Ann. Int. Med. **7**: 76, 1933.

[29] Sandweiss, D. J.; Saltzstein, H. C., and Farbman, A.: Am. J. Digest. Dis. **5**: 24, 1938. Culmer, C. U.; Atkinson, A. J., and Ivy, A. C.: Endocrinology **24**: 631, 1939.

[30] Hütter, K.: Arch. f. klin. Chir **151**: 651, 1928.

[31] Riggs, H. E.; Boles, R. S.; Reinhold, J. G., and Shore, P. S.: Gastroenterology **3**: 480, 1944.

[32] Abercrombie.[3] Cruveilhier.[4] Lebert.[7] Brinton.[16]

In regard to recurrences, it seems certain that the willingness of the patient to cooperate by continuing on a therapeutic regimen is a difficult feature to evaluate in the statistical results of any form of medical management. Perhaps, as some believe (Alvarez), the adherence to a strict regimen solely is not certain to help, unless the patient is able to live a "calm life." [33]

PATHOGENESIS

The principal features of the natural history of peptic ulcer must be understood before an adequate understanding of the pathogenesis of the disease will become evident. Other less subtle factors in the pathogenesis of the disease have been studied in great detail. The results of these studies have provided the blocks of a jigsaw puzzle which at present cannot be fitted together to provide an adequate picture of the cause or causes of the disease.

TABLE 3.—*Recurrence Rate in Peptic Ulcer According to Articles Which Present Data*

Observer	No. Cases	No. Recurrences at 1 Yr., %	No. Recurrences at 2 Yrs. %	Comment
Nielsen................	151	71	87	After care not given
Emery and Monroe....	1,085	79*	84*	After care variable
St. John and Flood....	140	..	65	6 feedings a day and alkalis as necessary
Raimondi and Collen..	151	66	..	6 feedings and Al gel
Emery and Monroe....	58	..	75*	"Strict Sippy" 9-12 mo.
	938	..	87*	"Lax Sippy"; 5 meals and alkaline powders

* A period of several years; the percentages refer to those patients who are "free of symptoms," and the cases are not referred to by the authors as "recurrences."

Numerous theories have been proposed regarding the cause of the acute ulcer which develops into a "chronic ulcer." These will be listed but not discussed. The best known theories are: (*a*) the acid-peptic; (*b*) the vascular: infarction, spasm, tugging on the vessels; (*c*) the gastritic: specific streptococcus, nonspecific inflammation from acid or rough and irritating foods; (*d*) the neurogenic: vascular spasm, hypermotility and secretion; (*e*) the allergic; (*f*) the nutritional; (*g*) the unknown constitutional, and (*h*) the unknown metabolic or endocrine. Several factors which predispose to chronicity have been established. They are: (*a*) acid; (*b*) rough food; (*c*) gastric retention; (*d*) poor nutrition, and (*e*) mucosal gradient of susceptibility to acid, the rank order of decreased susceptibility being the fundic, the lesser curvature in the pyloric region, the pyloric, duodenal, jejunal and ileal mucosa. The complexity of the problem and the discrepancies in the clinical and experimental literature are stumbling blocks to the clear and scientific understanding of the problem of the etiology of this disease.

Analytically it is clear that the ulcer can be due to (*a*) abnormal external destructive factors acting on the mucosa, or (*b*) decrease in the normal resistance of the mucosa to injury and in its normal healing properties or (*c*) to a combination of both.

It is also clear that a chronic peptic ulcer starts as an acute ulcer; in fact, there is no other tenable assumption. Whether there is some type of acute ulcer or an acute ulcer produced by some specific cause which gives rise to a chronic ulcer is unknown. I suspect that an acute ulcer produced by any means in the right place at the right time in a patient with ulcer will become chronic.

At present one can state with confidence that there is only one type of ulcer which occurs in man the counterpart of which has been produced experimentally. This is the postoperative gastrojejunal ulcer. It has been clearly demonstrated by Mann and his associates and by workers in this laboratory that this type of ulcer is due primarily to acid acting on the jejunal mucosa which is more susceptible to acid than the gastric and duodenal mucosa.[34] The factors of motor drive and inadequate nutrition are secondary factors which operate to increase the rate of development of the ulcer.

However, ulcers have been produced in the stomach and duodenum of the cat and dog by the continuous administration of histamine. These ulcers morphologically resemble the acute perforating type of ulcer in man.[35] It has been concluded that the "histamine ulcer" is due to the continuous secretion of acid; however, this has not been established as the sole factor because doses of histamine have been used which may exert a local angiotoxic effect on the mucosa. The same holds for the ulcers produced with caffeine.[36] In the rabbit a gastric ulcer which morphologically resembles chronic gastric ulcer in man has been produced. Ulcers occur spontaneously after bilateral vagotomy, if a rough diet is fed, or after an acute ulcer is produced by excision, if a rough diet is fed.[37]

Differentiation of an Acute Ulcer From a "Chronic" Peptic Ulcer in Regard to Healing.—One of the well established facts regarding ulcer was discovered in 1863 by Pavy, namely, that acute ulcers produced in animals heal rapidly or in three or four weeks.[38] The same is true of acute ulcers of the stomach in non-ulcer-susceptible human subjects.[39]

Recently Cummins, Grossman and Ivy [40] have presented evidence on the "healing time" of 63 duodenal and 6 gastric ulcers on rest and a rather strict Sippy regimen. Excluding 1 case which required two hundred and thirty days, the healing time ranged from thirteen to sixty-eight days, the average time being approximately forty days. These data support the commonly expressed statement that "chronic" duodenal or gastric ulcer in man usually heals rapidly under conditions of strict medical management. This emphasizes an important but simple principle in regard to the etiology of "chronic" peptic ulcer: the difference between the healing of an acute ulcer produced by excision and that of a "chronic" peptic ulcer is that in most ulcer patients "favorable conditions" are required for prompt healing.

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[33] The Need for Good Data on the Incidence of Recurrences of Peptic Ulcer, editorial, Gastroenterology **6**: 216, 1946.

[34] Bachrach, W. H.; Grossman, M. I., and Ivy, A. C.: Gastroenterology **6**: 563, 1946.

[35] Hay, L. J.; Vorco, R. L.; Code, C. F., and Wangensteen, O. H.: Surg., Gynec. & Obst. **75**: 170, 1942.

[36] Roth, J. A.; Ivy, A. C., and Atkinson, A. J.: Caffeine and "Peptic" Ulcer, J. A. M. A. **126**: 814 (Nov. 25) 1944. Roth, J. A., and Ivy, A. C.: Surgery **17**: 644, 1945.

[37] Beazell, J. M., and Ivy, A. C.: Chronic Gastric Ulcer Following Bilateral Vagotomy in the Rabbit and Dog, Arch. Path. **22**: 213 (Aug.) 1936.

[38] Pavy, F. W.: Phil. Tr., London **153**: 161, 1863.

[39] Riegel, F.: Diseases of the Stomach, Philadelphia, W. B. Saunders Company, 1905, p. 564. Wolf, S., and Wolff, H. G.: Human Gastric Function, New York, Oxford University Press, 1943.

[40] Cummins, G. M.; Grossman, M. I., and Ivy, A. C.: Gastroenterology **7**: 20, 1946.

AN ANALYSIS OF THE PSYCHOSOMATIC ASPECT OF THE ETIOLOGY OF PEPTIC ULCER

Long before the evolution of the modern school of psychoanalysis and psychosomatic medicine, discerning physicians recognized that emotional states played an important role in certain diseases. In this connection, peptic ulcer has been considered to be a "disease of civilization." However, one should not be too hasty in accepting a causal relationship between social stress and peptic ulcer. One should remember that the Abyssinians and the Hindus of southern India have a high incidence of gastric ulcer. Also, whether the increase of the incidence of a disease is real or apparent is a ubiquitous and frequently a difficult problem in medical practice.

It is important to decide whether psychic factors are merely contributory or causative in peptic ulcer. Does psychic trauma affect adversely an existing ulcer, as is generally conceded for some patients, or is it a causative factor? For example, it is known that physical and mental rest is important in determining the course of tuberculosis, but certainly a psychoanalyst would not deny to the Mycobacterium *tuberculosis* the role of the primary etiologic agent. The consideration of the patient as a whole should give proper but not undue emphasis to the psychic aspects of a disease.

In reading the psychosomatic literature, I have been impressed with the rather wide range of personality types which have been described as "typical" of the patient with peptic ulcer, as well as with the absence of a control group. The same personality types are described for "spastic colon," for mucous colitis, for ulcerative colitis and for biliary dyskinesia. If one omits the difficulty of satisfactorily explaining such observations, the next link in the chain of circumstances that may be concerned is: do emotional states evince typical physiologic responses in the stomach?

It is well known that displeasurable or dysphoric states inhibit gastric secretion and motility and that pleasurable or euphoric states increase secretion.[41] Since 1920,[42] reports have appeared indicating that hypersecretion and motility of the stomach may be caused in some persons by dysphoric states, such as anxiety, stress, guilt, frustration, hostility and resentment.[43] These studies, though exceedingly important, leave much to be desired from the quantitative point of view of a person who is familiar with the normal variations in gastric secretion and motility.

However, for hypothetic purposes let it be assumed (1) that the patient with peptic ulcer has a characteristic personality pattern and (2) that certain emotional states regularly induce gastric hyperactivity. The next question in the chain of circumstances is: can a state of gastric hyperactivity alone lead to a peptic ulcer?

The literature on this question is extensive, and my associates and I have extensively contributed to it. The evidence presumptively supports the view that hyperactivity of the stomach may cause gastric or duodenal ulcer. However, a definitive conclusion is unwarranted because there are important gaps in the evidence. Thus, the three propositions which support the view that dysphoric states, even in constitutionally predisposed persons, cause peptic ulcer are still unproved.

The physiologic anatomy on which the concept of "psychogenic stimulation" of gastric secretion is based warrants consideration. It has been established that the vagus nerves are entirely responsible for the cephalic phase of gastric secretion. It has also been established that the vagi are essential for what is termed "gastric motility on tone." For these reasons it has been tacitly assumed that the stimulation of gastric activity by emotional states also utilizes the vagal pathway. This assumption, though plausible and reasonable, awaits proof. Should it be established that the vagi are concerned, it is believed that the stimulation of secretion and motility should not be confused with that which is dependent on the taking and thought of food. To avoid such confusion, it has been suggested that the expression "emotogenic secretion" be used to designate gastric secretion which occurs as a result of certain affective states directly unrelated to the taking or thought of food.[44] The same adjective would be used to qualify changes in motility.

TREATMENT

The therapy of peptic ulcer presents two problems. One is to promote the rapidest possible healing of the active ulcer and, if present, to take care of the complication of obstruction, hemorrhage or perforation. The second, and at present the most difficult, is to prevent recurrences.

The Active Ulcer.—Medical: The principles of the treatment of the active uncomplicated gastric or duodenal ulcer, I believe, are highly satisfactory and well established: (*a*) physical and emotional rest, sedatives as indicated, and reassurance; (*b*) the buffering of acid with frequent small feedings, a highly nutritious diet to promote healing and taking advantage of the inhibitory action of fat on the gastric secretions; (*c*) antacid medicaments for the control of acidity, avoiding alteration of body chemistry as much as possible; (*d*) antispasmodics, as indicated and as tolerated by the patient; (*e*) continuous drip or therapeutic aspiration as indicated in special cases, and (*f*) the removal of foci of infection.

The Prevention of Recurrences.—Surgical: At present subtotal gastric resection appears to be the method of choice among most surgeons for the prevention of recurrences of peptic ulcer. I have reviewed nine articles published since 1941 on the extent of the failure of the operation. The mortality is low, not higher than 4 per cent in the hands of skilful surgeons. The operation failed to give partial or complete relief in only 12 per cent of 1,472 patients reported on[45]; however, in one paper (Jordan) only 43 per cent were completely free of symptoms. Kiefer[45b] writes that "the incidence of jejunal ulcer following subtotal gastrectomy for peptic ulcer is not accurately known." Experimentally Dr. Fauley and I[46] found that if the major portion of the acid-secreting mucosa is excised (fundusectomy) as suggested by Connell,[47] jejunal ulcer does not develop in the Mann-Williamson dog. (The Mann-Williamson dog has a gastrojejunostomy and drainage of the bile and pancreatic juice into the last 15 cm. of the ileum.) This experimentally demonstrates the importance of removing as much acid-secreting mucosa as is practically feasible, if jejunal ulcers are to be prevented. However, the smaller the gastric remnant the more likely are postprandial symptoms to occur.

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[41] Ivy, A. C.: Am. J. Digest. Dis. & Nutrition **1:** 845, 1935.

[42] Miller, R. J.; Bergeim, O.; Rehfuss, M. E., and Hawk, P. B.: Am. J. Physiol. **52:** 1, 1920. Miller, R. J.; Bergeim, O., and Hawk, P. B.: Science **52:** 253, 1920.

[43] Mittlemann, B., and Wolff, H. G.: Psychosom. Med. **4:** 5, 1942.

[44] Grossman, M. I.; Bachrach, W. H., and Ivy, A. C.: A Physiological *Analysis of the Problem of the Psychosomatic Etiology of Peptic Ulcer*, to be published.

[45] (*a*) Mage, S.: Ann. Surg. **116:** 729, 1942. Allen, A. W., and Welch, C. E.: ibid. **115:** 530, 1942. Custer, M. D.; Butt, H. R., and Waugh, J. M., cited by Berkman, J. M., and Heck, F. J.: Symptoms Following Partial Gastric Resection, Gastroenterology **5:** 85 (Aug.) 1945. Hinton, J.: Ann. Surg. **117:** 498, 1943. (*b*) Kiefer, E. D.: *Jejunal Ulcers and Recurrent Hemorrhages After Partial and Subtotal Gastrectomy for Peptic Ulcer*, J. A. M. A. **120:** 819 (Nov. 14) 1942. (*c*) Mateer, J. G., in discussion on Jordan, S. M.: End Results of Radical Surgery of the Gastrointestinal Tract as Seen by a Gastroenterologist, ibid. **116:** 586 (Feb. 15) 1941. Miller, C. G.: Surgery **12:** 383, 1942. Jordan, S. M.: End Results of Radical Surgery of the Gastrointestinal *Tract as Seen by a* [illegible] I. A. **116:** 586 (Feb. 15) 1941. Ingelfinger, [illegible] Med. **231:** 321, 1944. Reinhoff, W. F.: Ar [illegible]

[46] Fauley, G. B., and Ivy, A. C.: Surg., Gynec. & Obst. **63:** 717, 1936.

[47] Connell, F. G.: Surg., Gynec. & Obst. **53:** 750, 1931.

The preliminary reports on the supradiaphragmatic vagotomy are encouraging.[48] It is too early to evaluate the effect of the operation on the prevention of recurrences. It is an operation which should be given a clinical trial. It will certainly abolish the cephalic phase of gastric secretion, and it may sever the nervous pathway involved in the production of the psychosomatic abnormalities hypothetically involved in the production of gastric or duodenal ulcer. The procedure has the disadvantage of predisposing to gastric atony and retention, as well as to achalasia of the cardiac sphincter. It leaves the inhibitory motor and vasoconstrictor action of the sympathetic innervation unopposed. If the human stomach resembles that of the rabbit, gastric ulcers may occur if rough food is eaten. It will not prevent alcoholic beverages from producing gastric secretion, since alcohol probably acts by exciting histamine formation. It should not alter the effect which smoking produces on the stomach.[49]

Table 4—*Results of Treatment of Mann-Williamson Dogs*

Experiment	Procedure	No of Dogs	No with Ulcer	% Ulcer	Comment
1	Control	114	112	98.2	Survival time of those in which ulcer developed 1 to 9 mo, average 3.8 mo
2	$ALPO_3$ gel 4 × day for 1 yr	23	3	13.0	Survival time of those in which ulcer developed 2 to 9 mo, average 5.2 mo
	Stopped $ALPO_3$ gel	10	10	100.0	Ulcer developed in from 1 to 4 mo, average 2.4 mo.
3	Enterogastrone parenterally, 1 yr	33	7	21.0	Treated for 1 yr, then treatment was stopped
	After stopping treatment	16		.	11 died without ulcer in 12 to 46 mo; 3 died with ulcer in 18 to 30 mo; 2 still alive at 34 and 56 mo.
4	Muscle extract control	10	10	100.0	Survival time 1.25 to 4.5 mo, average 4 mo
5	Enterogastrone parenterally, 3 mo	10	3	33.0	Treated for 3 mo and then treatment was stopped
	After stopping treatment	7	..	....	6 died without ulcer in 1 to 23 mo, average 13 mo; 1 still alive at 30 mo
6	Extract orally	20	4	20.0	4 died with ulcer, average 5 mo; 3 died without ulcer, average 6 mo; 4 still under treatment
	Treatment stopped at 9 mo.	9	..	....	1 died without ulcer at 7 mo after treatment; 8 alive 2 to 14 mo after treatment

Every one will grant that destructive surgery is not the ideal approach to the solution of the problem of the prevention of recurrences.

The "Ideal Approach" to the Prevention of Recurrences.—As a working hypothesis, I have made several assumptions in regard to the medical or the pharmaceutic approach to the solution of the problem of the prevention of recurrences. One is that most patients with ulcer will not learn to live a "calm life" and remain on a strict management regimen. Another is that they will take a medicament on arising or before retiring. Hypothetically, if it were possible (*a*) to increase the resistance of the gastric and duodenal mucosa to injury or (*b*) to increase its healing potential, the recurrence of ulcer would be prevented. Or, on the basis of the important role that acid plays in injuring the mucosa and fibroblasts, it may be assumed that if a substance were available which abolished the *formation of acid without having side reactions* it would reduce the recurrence of ulcers.

Dr. Garrido in this laboratory has been making a systematic study of the synthetic antihistamine and atropine-like compounds. To date a satisfactory chemical has not been found. However, since the mechanism for the formation of hydrochloric acid by the parietal cell is so specific for the parietal cell, some substance which blocks the mechanism should be found in the course of time. Enterogastrone may be such a substance.

Enterogastrone is an autacoid or substance which is produced by the intestinal mucosa in the presence of adequate concentrations of fat and sugar in the chyme and which inhibits gastric secretion and motility. This substance given parenterally inhibits or abolishes the gastric secretory response to histamine.

Over five years ago my associates and I (Drs. Greengard, Fauley and Atkinson) started to administer parenterally an intestinal extract containing enterogastrone to Mann-Williamson dogs. Postoperative jejunal ulcer develops in 98 per cent of Mann-Williamson dogs if they are not treated. When 33 were treated daily parenterally for one year jejunal ulcer developed in only 21 per cent. When the treatment was stopped, it was expected that jejunal ulcer would develop within an average of 2.4 months, as had occurred when we stopped treating another group of Mann-Williamson dogs with aluminum phosphate gel. But an ulcer did not develop in any of 16 dogs until eighteen to thirty months after the treatment was discontinued (table 4). This indicated that the enterogastrone preparation gave some sort of resistance which endured for some time after the cessation of treatment.[50] The data in table 4 show that an extract made from muscle had no protective effect; also that the enterogastrone preparation given parenterally for three months provides some protection. This phenomenon of protection and enduring resistance has been observed by Sandweiss and his associates[51] to be true of an extract made from human urine.

More recently it has been found by Dr. Grossman that a preparation made from the intestinal mucosa offers protection and resistance against the development of ulcers when given orally to Mann-Williamson dogs.

Though the war retarded the investigation of the injectable product in the prevention of recurrences in human patients, 58 patients have been treated. Thirty-two patients have been injected with the enterogastrone preparation three times a week. Three of these patients had a jejunal, 1 a duodenal and gastric and 28 a duodenal ulcer. The duration of their history of ulcer ranged from five to fifteen years, and they had at least one definite recurrence each year; most of them had intermittent distress monthly throughout each year while on "lax" ambulatory management. The 32 patients have been treated for from two to twelve months. Twenty-four of the 32 have been asymptomatic since the treatment was started. Twenty-two of 23 have been asymptomatic for from one to twenty-seven months since the treatment was discontinued. I have been unable to follow 4 of the 32. Roentgenograms of 20 of the 32 have manifested improvement.

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[48] Dragstedt, L R, and Schafer, P. W.. Surgery **17:**742, 1945 Thornton, T F, Storer, E H., and Dragstedt, L. R. Supradiaphragmatic Section of Vagus Nerves, J. A M. A **130:**764 (March 23) 1946 Dragstedt, L R, and Owens, F. M, Jr.: Proc Soc Exper. Biol & Med. **53:**152, 1943. Dragstedt, L R. Ann. Surg. **122:**973, 1945. Dragstedt, L. R; Palmer, W. L, Schafer, P. W., and Hodges, P. C Gastroenterology **3:**450, 1944 Weinstein, V. A.; Colp, R., Hollander, F, and Jemerin, E E: Surg, Gynec. & Obst. **79:**297, 1944 Moore, F. D.; Chapman, W. P.; Schulz, M. D. and Jones, C. M.: New England J. Med **234:**241, 1946. Barron, L. E, and Curtis, G. M.: Effect of Vagotomy on Gastric Motor Mechanism of Man, Arch Surg. **34:**1132 (June) 1937.

[49] Schiffrin, M J, and Ivy, A. C: Physiology of Gastric Secretion, Particularly as Related to the Ulcer Problem, Arch Surg. **44:**399 (March) 1942.

[50] Ivy, A. C.: Federation Proc. **4:**222, 1945.

[51] Sandweiss, D. J.: Gastroenterology **1:**965, 1943.

Since 8 of these 32 patients had recurrences, a group of 26 patients were started on injections six times a week. One of these patients had a jejunal ulcer, 1 a gastric and duodenal and the rest a duodenal ulcer. The ulcer history ranged from five to forty-seven years. Definite recurrences occurred at least once a year, and intermittent distress occurred monthly in 9 patients on "lax" ambulatory management and in 3 on rather strict advanced, continuous Sippy ambulatory management. These 26 patients have been treated for from three to twelve months. Twenty-two of the 26 have been asymptomatic since the treatment was begun. In none of 10 who received the treatment for one year have symptoms developed for from one to twenty-eight months after stopping the treatment. Roentgenograms of 19 of the 26 have shown improvement.

Patients are now receiving the oral preparation, but there are no results to report at this time.

Obviously no conclusions are warranted at present. The results, however, are sufficiently encouraging to show that this method of attack on the problem of the prevention of recurrences of peptic ulcer is worthy of further study.

Comment: I believe that the most promising approach for the solution of the problem of the prevention of recurrences of peptic ulcer is to find some therapeutically practical and innocuous method for increasing the resistance of the mucosa to injury and for completely blocking the parietal cell.

SUMMARY

1. The available evidence indicates that in approximately 1.5 million people in the United States above the age of 30 years peptic ulcers develop during a period of ten years. Ten per cent of the population will have the disease develop during their lifetime according to the present rate of incidence of the disease.

2. A study of necropsy mortality and clinical records shows that a shift in the location and sex ratio of the disease has occurred during the past century. This is evident in the data since 1920, since which time the shift cannot be justifiably ascribed to increased recognition.

3. The evidence is insufficient to explain categorically any of the following factors in the natural history of the disease: the location of the ulcer and the relation of sex, age and seasons to its incidence, onset or recurrence.

4. At present one can state with confidence that there is only one type of ulcer which occurs in man, the counterpart of which has been produced experimentally. This is the postoperative gastrojejunal ulcer which is caused chiefly by acid acting on the jejunal mucosa, which is more susceptible to acid than the gastric and duodenal.

5. The difference between the rate of healing of an acute ulcer produced by excision and that of a "chronic" peptic ulcer is that in most ulcer patients "favorable conditions" are required for prompt healing.

6. Physical and mental rest is an important "favorable condition" for healing of the "chronic" peptic ulcer.

7. None of the three propositions on which are based the view that dysphoric states cause peptic ulcer has been proved. These three propositions are: (1) that the peptic ulcer patient has a characteristic personality pattern or dysphoria; (2) that certain emotional states regularly induce gastric hyperactivity, and (3) that a state of gastric hyperactivity alone can cause peptic ulcer.

8. It is believed that the principles for the management of the exacerbations of the disease are complete and satisfactory.

9. The problem in peptic ulcer is to prevent recurrences. The surgical methods for the prevention of recurrences are to be considered as stopgaps, to be used until some more effective medical method is discovered.

10. It may be hoped that future research will reveal some innocuous means for rendering the gastric, duodenal and jejunal mucosa less susceptible to injury and for completely blocking the parietal cell.

The present address of Dr. Ivy is: University of Illinois, 1835 West Polk Street, Chicago.

AMNESIA DURING PARTURITION

Use of Pentobarbital Sodium and Scopolamine Hydrobromide

PERRY P. VOLPITTO, M.D.
Augusta, Ga.

The need for some form of relief of pain during parturition is admitted by most obstetricians and desired by all women in labor. The abundance and variety of methods and agents described in the medical literature in an attempt to accomplish such an end serve only to stress the need for improvement. It is admitted from the start that the method to be described is not a panacea. However, in the hands of my associates and me it has been proved to be efficacious, simple and safe for both the mother and the fetus.

The combination of pentobarbital sodium and scopolamine hydrobromide as agents for the production of amnesia during the first and second stages of parturition has well proved its value.[1] However, practically all

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From the Department of Anesthesiology, University of Georgia School of Medicine.

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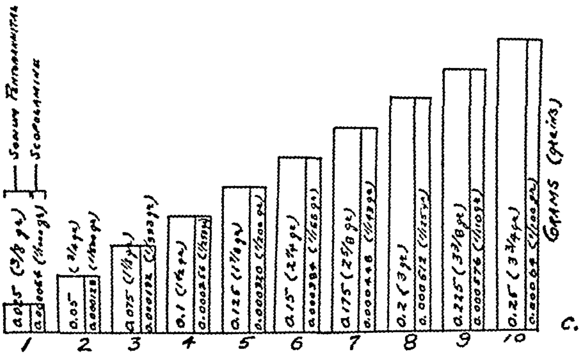
[1] (a) Graham, J. D.: Nembutal "844" in Obstetrics, Journal-Lancet **51:** 470-471 (Aug. 1) 1931. (b) Lundy, J. S.: Experience with Sodium Ethyl (1-Methylbutyl) Barbiturate (Nembutal) in More Than Two Thousand Three Hundred Cases, S. Clin. North America **11:** 909-915 (Aug.) 1931. (c) Galloway, C. E., and Smith, P. H.: Pentobarbital Sodium and Scopolamine for Relief of Pain in Five Hundred Deliveries, Am. J. Obst. & Gynec. **29:** 207-215 (Feb.) 1935. (d) Boylan, J. P.: Pentobarbital Sodium Analgesia with a Report of Two Hundred and Five Cases, ibid. **29:** 440-443 (March) 1935. (c) Averett, L.: Nembutal and Scopolamine Analgesia in Labor with a Report of One Hundred and Sixty Cases, ibid. **27:** 109-112 (Jan.) 1934. (f) McNeal, A.; Bauer, C. P., and Sanford, H.: Sodium Pentobarbital and Scopolamine Analgesia in Labor, Anesth. & Analg. **13:** 111-115 (May-June) 1934. (g) McGuiness, F. G.: Relief of Pain in Labor with Nembutal, Canad. M. A. J. **30:** 162-164 (Feb.) 1934. (h) Parker, J. D.: Pentobarbital Sodium as Obstetrical Analgesic, J. South Carolina M. A. **31:** 210-212 (Nov.) 1935. (i) Edwards, W. C.: Pentobarbital-Sodium Analgesia in Obstetrics in Home, J. A. M. A. **108:** 957-959 (March 20) 1937. (j) Galloway, C. E.; Grier, R. M., and Blessing, R.: Pentobarbital Sodium and Scopolamine Hydrobromide: Three Years' Experiences with These Drugs in Obstetrics at Evanston Hospital, ibid. **107:** 1707-1710 (Nov. 21) 1936. (k) Frech, H. C., Jr.; Volpitto, P. P., and Torpin, R.: Amnesia in Obstetric Practice, J. M. A. Georgia **28:** 147-153 (April) 1939. (l) Hanley, B. J.: Obstetric Analgesia (with Pentobarbital Sodium and Scopolamine) in Private Patients, Am. J. Surg. **54:** 403-406 (Nov.) 1941.

experiences with these agents in the past have been with the oral or rectal administration of the pentobarbital sodium and the hypodermic administration of the scopolamine hydrobromide.

The oral route of administration of the barbiturates in obstetric patients has proved to be pure guesswork. This is true from the standpoint not only of dosage but also of whether or not the agent will be adequately and quickly absorbed. A full stomach or an altered p_H of its contents might easily upset any degree of absorption. These same objections may apply to rectal routes of administration. The outcome not infrequently results in an overdosage of the drug to the mother and, as a direct consequence, in a higher incidence of apneic newborn infants. A failure to get an adequate effect, either because the drug is not absorbed or because the amount is insufficient, also was experienced. In obstetric patients having a precipitate labor, as is the case in many multiparas, there is not time in many instances for the drugs, if given, to have their full effect. If too small a dose is given or if the stomach is full, time will not allow for further sedation.

Late in 1941 the intravenous use of pentobarbital sodium and scopolamine hydrobromide to induce amnesia in obstetric patients was initiated by the department with which I am connected. In a recent survey of the literature it was interesting to note three reports. In December 1932 W. F. Abbott[2] described excellent results with the intravenous use of pentobarbital sodium alone in a series of 75 patients in labor. In June 1944 John R. Evans[3] reported the successful intravenous use of vinbarbital sodium for the induction of obstetric amnesia in 1,500 patients. In 1946 Lewis[4] reported the intravenous use of vinbarbital sodium for amnesia, analgesia and anesthesia in obstetrics.



Dilutions of pentobarbital sodium and scopolamine.

Pentobarbital sodium and scopolamine hydrobromide have been used intravenously in the University Hospital in over 1,000 obstetric patients during the past four years. Of this large group, 170 patients were followed closely enough to warrant this report.

METHOD

(The object is amnesia, not analgesia or anesthesia!) The contents of a pentobarbital sodium (0.25 Gm. [3¾ grains]) ampule and a scopolamine hydrobromide (0.00064 Gm. [1/100 grain] ampule are mixed and diluted to a 10 cc. capacity with sterile distilled water. Each cubic centimeter of this dilution contains 0.025 Gm. (3/8 grain) of pentobarbital sodium and 0.000064 Gm. (1/1000 grain) of scopolamine hydrobromide (chart). (Hereafter, to avoid confusion, the dosage of these drugs will be expressed in cubic centimeters.)

In any normal primipara or multipara, as soon as regular pains develop four to five minutes apart and last at least thirty or more seconds, the combination of the aforementioned drugs is given intravenously. A 10 cc. syringe with a small, 27 to 22 gage, needle is employed. An initial 3 or 4 cc. of the mixed agents is given fairly rapidly, at the rate of 1 cc. every five to ten seconds; then the injection is slowed to the rate of about 1 cc. every thirty seconds until the patient either begins to fall asleep or talks incoherently. At this point the injection is stopped, but the needle is kept in place and the patient is watched during a uterine contraction. If she is extremely restless during this pain and talks coherently, an additional 1 to 3 cc. at the most is administered. On the other hand, if the patient is slightly restless or opens her eyes and talks incoherently, no further amount of the mixture of drugs is given and the needle is withdrawn.

The average patient, whether primapara or multipara, will require a total initial injection of 10 cc. of the mixture. As little as 6 cc. and as much as 20 cc. has been found necessary in some instances. A patient whose cervix is fully dilated and who is beginning to bear down with each pain may require greater initial or additional amounts; however, one should be extremely cautious at this time, as it is amnesia, not analgesia, that one is seeking; hence one should expect more restlessness at this time and, naturally, incoherence. Care must be taken not to mistake momentary lucid intervals, such as recognition by the patient or the request for relief of pain, as time for administration of more drugs. A nurse or attendant should watch the patient for restlessness or need for more drugs.

After the initial induction of amnesia, the frequency and amounts of further injections will depend on the particular patient and the progress of labor. When the patient tends to become restless during the pain or does not sleep and is somewhat lucid between uterine contractions, then administration of more of the drugs is indicated. This will generally occur about three-fourths to one hour after the initial injection in the average patient and usually will require use of not more than 2 cc. of the dilution of amnesic drugs intravenously. The average multipara, unless the cervix is fully dilated at the beginning, may need one such injection (2 cc.) repeated and the average primipara about three such injections. The interval between the need of additional amounts grows longer with each injection, e. g., one hour for the first, two hours for the second and three to four hours before need for a third.

RESULTS

Cases of 170 patients comprise this report, although over 1,000 women in labor were delivered during a four year period with the intravenous use of pentobarbital sodium and scopolamine hydrobromide for induction of amnesia.

This group is composed of white and Negro women from both the charity and the private services of the University Hospital. In this group of 170 patients there were 75 primiparas and 95 multiparas. One hundred and sixty-four (96.4 per cent) of the women delivered spontaneously, and 6 had low forceps deliveries. One hundred and fifty-two, or 89.4 per cent, of the patients reported complete amnesia (i.e., no events whatsoever were recalled after the initial induction of amnesia). Eighteen, or 10.6 per cent, reported partial amnesia, i.e., they were able to recall some isolated phases of the labor.

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[2] Abbott, W. F.: Nembutal (Pentobarbital Sodium): Intravenous Use During Labor, Canad. M. A. J. **27**: 620-623 (Dec.) 1932.

[3] Evans, J. R.: Vinbarbital: Intravenous Administration for Induction of Obstetric Amnesia, Am. J. Obst. & Gynec. **47**: 821-825 (June) 1944.

[4] Lewis, M. S.: Vinbarbital Sodium for Obstetric Amnesia, Analgesia and Anesthesia, Am. J. Obst. & Gynec. **51**: 395-402 (March) 1946.

PROGRESS OF LABOR

In 18 (10.6 per cent) of this group there was an apparent slowing of either or both first and second stages of labor. In 5 (2.9 per cent) of this series labor pains ceased completely after the administration of the drugs, no further barbiturate-scopolamine mixture was given and the patient was allowed to deliver without benefit of amnesia.

Maternal Morbidity and Mortality.—Three of the women (1.7 per cent) became extremely excited and almost unmanageable. This occurred during the early second stage, and all of them were controlled by the administration of $\frac{1}{8}$ grain (0.0075 Gm.) of morphine sulfate intravenously. Thirty-four (20 per cent) of the patients became exceedingly restless during the later part of the second stage and were fairly well controlled by an additional 1 to 3 cc. of the pentobarbital–sodium scopolamine hydrobromide mixture. No attempt to abolish the restlessness completely was ever considered or desired. A moderate amount of restlessness with each uterine contraction was always maintained in all patients.

A severe drop in blood pressure occurred in 2 patients. This was associated with a rapid injection of the drugs intravenously by inexperienced personnel. Both patients rapidly recovered on the administration of 2 mg. of neo-synephrine hydrochloride intravenously and high concentration of oxygen by means of an anesthetic bag and mask.

Severe respiratory depression occurred in 1 patient (she showed a shallow respiratory exchange, tachycardia and cyanosis) to whom the drugs were given too rapidly and the airway was not watched closely enough. On establishment of an adequate airway and the administration of oxygen with an anesthetic apparatus, the patient, within a few minutes, began to breathe spontaneously with an adequate exchange, the pulse slowed and cyanosis disappeared.

Nausea and vomiting occurred in 3 patients (1.75 per cent) of the group and was controlled with small additional doses of the amnesic drugs.

All the observed patients awakened and were able to speak coherently within fifteen minutes to one hour after the delivery and the repair of a routine episiotomy. For the repair of episiotomy the patients were given either cyclopropane by the carbon dioxide–absorption technic or open drop ether. The technic and agents employed depended on the experience of the person giving the anesthetic.

There was one maternal death. The patient was a white primipara aged 22 years. She walked into the hospital, and the nurse recorded on her chart a temperature of 98.4 F. (oral) and a respiratory rate of 20 per minute. One hour and forty-five minutes later she was given 10 cc. of pentobarbital sodium and scopolamine hydrobromide intravenously. Labor progressed normally but rapidly, and forty minutes later she was given an additional 5 cc. of the mixture. Shortly after this the patient appeared cyanotic and dyspneic; the pulse rate was 160 and the blood pressure 70 systolic and 40 diastolic. Two hours later a high forceps delivery of a stillborn fetus was carried out. The patient died four hours after the second administration of drugs, in spite of administration of oxygen by positive pressure, cedilanid (lanatoside C isolated from Digitalis lanata) intravenously and 50 cc. of 50 per cent dextrose. (It was thought that an acute cardiac decompensation had developed.) Postmortem examination revealed a normal heart. The patient had early (first stage) lobar pneumonia involving both lungs.

Infant Morbidity and Mortality.—There were 171 babies delivered of 170 mothers. One of the deliveries was a twin birth. One hundred and fifty-seven (92.4 per cent) of the babies breathed spontaneously immediately after birth. Thirteen (7.6 per cent) were born apneic and were given endotracheal insufflation of air, the Torpin insufflator[5] being employed. Twelve of this group were successfully resuscitated. It is interesting to note that 5 babies with depressed respiratory tracts were born to mothers who had been given $\frac{1}{6}$ to $\frac{1}{4}$ grain (0.01 to 0.15 Gm.) of morphine sulfate subcutaneously one to four hours before delivery in addition to the barbiturate and scopolamine hydrobromide. Uterine inertia had been present in these cases. One of the 13 babies died after ten minutes of attempted endotracheal insufflation of air. This child weighed 4 pounds 9 ounces (2069 Gm.) at birth. Labor was extremely rapid. Five cubic centimeters of the drugs was given to the mother twenty-six minutes before delivery.

There was 1 stillborn infant in the series. This infant was born to the patient who died of lobar pneumonia complicated by the administration of pentobarbital sodium and scopolamine hydrobromide.

COMMENT

It must be emphasized that pentobarbital sodium is primarily a hypnotic agent. In safe dosages it lacks completely analgesic or anesthetic potentialities. Pentobarbital sodium combined with scopolamine hydrobromide is capable of producing excellent amnesia.

There have been no authenticated reports in the literature of maternal deaths directly attributable to pentobarbital sodium and scopolamine hydrobromide when these agents were used judiciously. The maternal death reported in this series might have been avoided if the presence of lobar pneumonia had been discovered on admission of the patient to the hospital. It is conceded that barbiturates should not be employed (1) in patients with evidence of pulmonary disease, (2) in debilitated persons, (3) in toxic patients, (4) in asthmatic persons and (5) in patients with hepatic damage, suspected or real.

The high incidence of spontaneous breathing in the newborn infants of this series (92.4 per cent, corrected to 95.9 per cent on exclusion of the 5 cases in which administration of morphine sulfate complicated the amnesia) adds further evidence to the impression that nonanesthetizing doses of pentobarbital sodium do not depress the respiratory center of the fetus. This also is in keeping with the experimental evidence reported by Hamilton, Woodbury and Torpin.[6] These investigators found pentobarbital sodium and scopolamine hydrobromide to be among the drugs which when given during active labor increased the active maternal arterial pressure to the placenta.

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[5] Volpitto, P. P., and Torpin, R.: Apnea Neonatorum: Its Treatment by a Simplified Insufflation Technique, South M. J. 35: 550-564 (June) 1942.

The high incidence of spontaneous deliveries (96.4 per cent) adds evidence to the clinical impression that the second stage of labor is shortened. Experimentally, Hamilton, Woodbury and Torpin[6] found that pentobarbital sodium (administered orally) and scopolamine hydrobromide (given hypodermically) did inhibit the action of the maternal abdominal muscles in the second stage of labor. However, this was only a temporary delay, as it returned later in the second stage and the patient delivered spontaneously. This experimental work needs to be repeated with the drugs given intravenously. It is our impression that if these drugs are not given too early in labor and only in amnesic dosages labor usually is not delayed and spontaneous delivery occurs. The recent report of Lewis[4] on the use of vinbarbital sodium intravenously, with or without scopolamine hydrobromide, in obstetrics is interesting. Lewis attempts to obtain analgesia and anesthesia with a primary agent (vinbarbital sodium) poorly suited for such a task unless the bounds of safety are encroached on for both the mother and the fetus.

Finally, it must be stressed that a desirable prerequisite is a cooperation between obstetrician, patient and physician experienced in the use of any agent or technic for the relief of pain in obstetrics. In such circumstances no routine method need be applied. The choice of agents or technics depends on the obstetric problem at hand.

CONCLUSIONS

Intravenous use of pentobarbital sodium and scopolamine hydrobromide has proved to be, in our experience, an efficient and safe method for obtaining satisfactory amnesia during parturition.

The safety and success of the method described will depend on the experience and ability of the person employing it.

The technic described is offered as another method to be judiciously employed in the armamentarium for relief of pain during labor. It is not intended to replace or displace any safe methods now in use.

ABSTRACT OF DISCUSSION

Dr. John A. Moffitt, Los Angeles: One of the principal advantages of the intravenous administration of pentobarbital sodium over the oral method in the obstetric patient is its controllability. The desired effect may be obtained more rapidly, and when this is reached the injection is stopped; it is again resumed when signs of amnesia begin to wear off. Patients differ greatly in the amount of the drug necessary, and there is less likelihood of administering too large or even too small a dose when the intravenous method is used. The barbiturates are metabolized more rapidly when given intravenously and there is less danger of a cumulative effect, especially when a large amount is necessary toward the end of the first stage of labor. Occasionally, patients have an idiosyncrasy to barbiturates, and it is a distinct advantage to be able to stop the administration at once, as such symptoms would appear soon after a small amount had been given. This is possible only by the intravenous use. Many obstetric patients have food in their stomachs when labor begins. Digestion is retarded, and the food remains in the stomach longer than normally, retarding absorption of drugs taken by mouth. Vomiting may occur, with loss of all or part of the orally administered medicament, rendering it difficult to determine how much of the drug the patient will need. If given intravenously, not only is none of it lost if there is vomiting but vomiting is less likely to occur. Sometimes it is necessary to use an opiate in conjunction with pentobarbital sodium and scopolamine hydrobromide, either to quiet the excitable patient or to control the extremely severe pain which may occur. Meperidine hydrochloride (Demerol) seems preferable to morphine sulfate, with less depressing effect on the respiration of the babies, more of whom, at least in our experience, cry spontaneously. One principal disadvantage of using pentobarbital sodium and scopolamine hydrobromide intravenously is that it requires more constant attendance of a physician, which, however desirable, is not always possible, especially in private practice While oral administration of pentobarbital sodium and intramuscular administration of scopolamine hydrobromide may be done by a nurse, many hospitals do not permit nurses to give drugs intravenously, and it would be necessary for the obstetrician or the anesthetist to be present much earlier if this method were used. The advantages of the technic described by Dr. Volpitto so far outweigh the disadvantages that I believe there is a definite place for it and feel sure that many patients are better cared for under this method than with some of the others commonly employed.

Dr Walter Lawrence, San Francisco: There is an excellent feature in Dr. Volpitto's paper which is extremely satisfying to me He has repeatedly stressed the importance of restricting the dosage of the intravenously administered barbiturate-scopolamine-hydrobromide combination rigidly within safe limitations. Nevertheless, one is led to speculate as to how often the administration of the drugs will be improperly crowded when the presence of an anxious husband or mother in the labor room upsets the anesthetist's judgment. I can testify as to the dangers of the oral administration of barbiturates during labor. During one year in the hospital with which I am connected we had deaths of 5 infants due to atelectasis in about five hundred deliveries. In all the cases barbiturates were given orally to the mothers in what I considered excessive doses; these were sometimes combined with morphine sulfate I have always been opposed to this uncertain and dangerous method, and it has been largely abandoned. If I can make a contribution to this paper, it would be to express, as I do almost daily to the hospital staff, my severe disapproval of attempts to block completely the reflex arc by the intravenous use of the barbiturates. These drugs produce a progressive descending depression and will not completely abolish the reflex arc and its reflex activity until a dangerous oversaturation of the higher centers has been produced. If Dr. Volpitto's method falls into disrepute it will be because this limitation of the barbiturates has not been adhered to. I should like to ask Dr. Volpitto whether, in referring to pentobarbital sodium, he means the preparation having the oxygen on the no. 2 carbon of the molecule. I am sure that others, like myself, when they see the prefix "pento-" immediately think of pentothal sodium, which is identical in every respect except that the oxygen on the no. 2 carbon is replaced by sulfur. A more distinctive terminology would prevent some difficulties with these two drugs.

Dr. Perry P. Volpitto, Augusta, Ga.: I certainly agree with Dr. Moffitt about meperidine hydrochloride. We are still not too positive about that particular point, but it is being investigated at present and I think it is something that should be considered. Regarding Dr. Lawrence's worry about the father and mother of the patient: In our particular institution when patients are in labor they are put in the labor room and relatives are not allowed in the vicinity. I think that is about the only way to get rid of some one "getting into your hair," as it were. As to whether it is the oxygen molecule or the sulfur in the no. 2 position, it is the oxygen. If it were the sulfur, this would make it a thiopentobarbital and it would be pentothal sodium instead. This is pentobarbital sodium, more commonly known by the trade name of Nembutal.

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[6] Woodbury, R. A.; Hamilton, W. F., and Torpin, R.: The Relationship Between Abdominal, Uterine and Arterial Pressures During Labor, Am. J. Physiol. **121:** 640 649 (March) 1938.

INCIDENCE OF URINARY CALCULI IN THE AMERICAN NEGRO

AUSTIN I. DODSON, M.D.
and
JOHN R. CLARK, M.D.
Richmond, Va.

It is generally conceded that some races have a higher incidence of urinary calculi than others. The Negro is generally believed to be particularly immune to this disease. J. Swift Joly[1] in discussing the etiology of stone made the following statement: "On turning to the racial incidence of lithiasis, one is struck by the comparative immunity of the Negro. This, I believe, still holds good in the case of the Negro population of America which has received no fresh blood from Africa for almost a century." Holmes and Coplan[2] wrote that only 1 case of urolithiasis in a Negro was seen at the James M. Jackson Memorial Hospital in Miami, Fla., during a five year period. This is of particular interest, since, according to the same authors, the incidence of calculi is particularly high in southern Florida.

Table 1.—*Analysis of Frequency of Urolithiasis in Several Hospitals in the Mid-Atlantic Area of the United States*

	Admissions		All Urinary Stones					Renal and Ureteral Stones				
			Cases		Per Cent of Admissions		Ratio W/N	Cases		Per Cent of Admissions		Ratio W/N
	W	N	W	N	W	N		W	N	W	N	
* Johns Hopkins Hospital, Baltimore	46,787	18,656	299	33	0.639	0.177	3.61	259	27	0.554	0.145	3.81
† University Hospital, Charlottesville, Va.	27,965	5,833	185	14	0.662	0.240	2.76	161	9	0.576	0.155	3.73
Medical College, Richmond, Va	24,310	18,378	116	30	0.477	0.163	2.93	108	27	0.444	0.147	3.05
Duke Hospital, Durham, N. C	27,481	5,165	390	34	1.42	0.658	2.16	364	32	1.325	0.620	2.14
Total	126,543	48,032	990	111	0.782	0.231	3.39	892	95	0.705	0.198	3.56
	Population											
‡ Richmond, Va	167,374	61,191	346	24	0.207	0.039	5.27	318	23	0.19	0.038	5.06

* Due to a change in the recording system during the time of this study, we cannot be sure that we found every case. The consecutive history numbers make us believe that we missed relatively few, and probably the same proportionality holds in those we missed.

† No separate record kept of admissions. From averages taken eight times on 2,000 consecutive admissions at every season during the five year period, the Negro admissions were 17.26 per cent of the total.

‡ Chamber of Commerce population figure for "metropolitan area."

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Reaser[3] commented on the infrequent occurrence of urolithiasis in patients coming to autopsy at St. Elizabeth's Hospital, Washington, D. C. In 5,900 autopsies, 70 cases of calculi were found, only 14 of which were in Negro patients. The total number of Negro patients was not available, therefore a percentage ratio could not be determined. Ezickson,[4] in a study of the relationship of urinary tract infections to urolithiasis in 134 patients who had or had had stones, found only 4 Negroes in the entire group. Although he stated that Negroes comprised a substantial portion of the general admissions, a definite ratio was not given.

Few comparisons of the incidence of urolithiasis in the white and Negro races have been published. Day[5] published a comparison of the urologic diseases in white and Negro patients admitted to the Louisville General Hospital from June 1, 1916 to April 1, 1920. Calculi were found three times as often in the white as in the Negro patients. He mentioned a similar report by Matas, who compared admissions to the Charity Hospital in New Orleans from 1884 to 1894. Only bladder stones were mentioned, but the ratio was also 3 to 1. Cary[6] analyzed the admissions to several hospitals in the mid-Atlantic area of the United States. The analysis indicated that cases of urolithiasis in this area are from three and one-half to five times as frequent in white persons as among Negroes (table 1). Quinland[7] reported 33 cases of urinary calculi occurring in 1,019 autopsies and 14,900 pathologic specimens collected from Negro patients admitted to the George W. Hubbard Hospital, Nashville, Tenn., during a period of twenty-two years. This report suggests a much lower incidence than Cary's report but represents only patients admitted to one relatively small hospital. Vermooten[8] commented on the extreme rarity of renal calculi in the South African Negro and called attention to mortality statistics for the United States of America Registration Area which show that deaths from renal calculus per million population are as follows: white males 9 and colored males 7; white females 4.1 and colored females 2.7. These statistics indicate a higher incidence in the Negro than that reported by Cary, but an analysis of our patients and of those reported by Quinland indicates a higher mortality from renal calculi among Negroes than in the white race.

The frequency with which we encounter calculi of the urinary tract on the wards of the Hospital Division of the Medical College of Virginia convinces us that although urolithiasis may occur less frequently in the Negro than in the white race, it is by no means uncommon. Furthermore, we have observed that stones in the Negro are more frequently accompanied with infection and are far more destructive to renal tissue than those in white patients. The fact that Negroes are more reluctant to seek medical aid and depend more on home remedies than do white people certainly contributes to some extent to higher morbidity and mortality as a result of stone. The same thing doubtless contributes to the fact that calculi are less frequently found among them.

So far as race is concerned in the etiology of stones, the American Negro seems to occupy a unique position. According to Joly[9] "countries which have been colonized by Anglo-Saxons, such as North America or

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From the urological service of the Hospital Division, Medical College of Virginia.

Read before the Section on Urology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

[1] Joly, J. S.: The Etiology of Stone, J. Urol. **32**: 541 (Dec.) 1934.

[2] Holmes, R. J., and Coplan, M. M.: Geographic Incidence of Urolithiasis, J. Urol. **23**: 477 (April) 1930.

[3] Reaser, E. F.: Racial Incidence of Urolithiasis, J. Urol. **34**: 148 (Aug.) 1935.

[4] Ezickson, W. J.: The Relationship of Urinary Tract Infection to Urolithiasis, J. Urol. **51**: 431 (April) 1944.

[5] Day, G. H.: Urologic and Venereal Idiosyncrasies Presented by the Negro, J. Urol. **5**: 19 (Jan.) 1921.

[6] Cary, M. K.: The Racial Incidence of Urolithiasis, J. Urol. **37**: 651 (May) 1937.

[7] Quinland, W. S.: Urinary Lithiasis: Review of Thirty-Three Cases in Negroes, J. Urol. **46**: 791 (June) 1945.

[8] Vermooten, V.: The Occurrence of Renal Calculi and Their Possible Relation to Diet as Illustrated in the South African Negro, J. A. M. A. **109**: 857 (Sept. 11) 1937.

[9] Joly, J. S.: Stone and Calculous Disease of the Urinary Organs, St. Louis, C. V. Mosby Company, 1940.

Oceana, do not show as high a stone incidence as the parent state. The same applies to South America, which is largely colonized by Spain and Portugal. Stone is practically unknown in this continent, but it is not uncommon in Spain." Contrary to this, the Negro, who, according to all reports, seems rarely to suffer from urinary calculi in his native land, within two hundred years of his arrival in North America is stricken with this disease at least one fourth as often as are members of the white race. The admixture of Caucasian blood has been mentioned as a possible factor in the causation of stone in the Negro, but from the physical appearance of many of our patients it is doubtful that this is of much importance.

Vermooten has stated that the South African Negro subsists on a diet low in calcium, with an acid ash base and a high vitamin A content. He also commented on the densely calcified bony structure and the freedom from dental caries among these people.

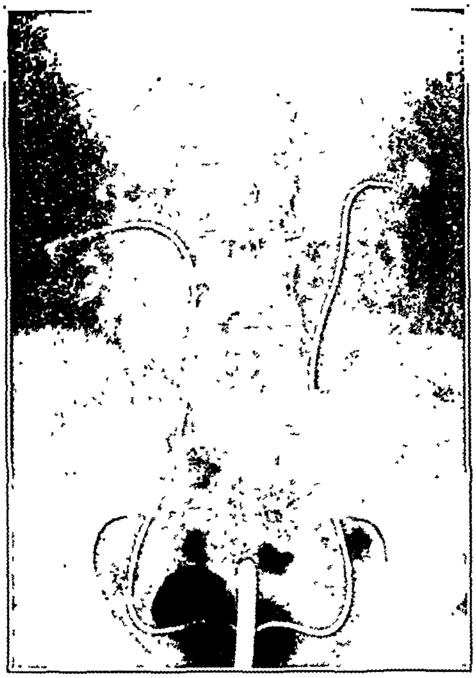

Fig. 1.—Multiple bilateral calculi.

So far as we can determine, the diet of the Negroes in our community differs little, if any, from that of white people of similar income, and an examination of 67 Negro patients recently admitted to the Hospital Division of the Medical College of Virginia showed that 23 had carious teeth. Thirteen of these patients also had pyuria, varying from ten to numerous cells to the field. These factors may play some part in the more frequent occurrence of stones in the American Negro.

Since the Negro race does seem to enjoy a natural immunity to urolithiasis, and since those of the race who have migrated to North America seem at least in part to have lost that immunity, a careful study of the problem among the Negroes of America should throw some light on the complex problem of the etiology of this disease. It is with the hope of stimulating such investigation that an analysis of our patients is presented.

During the ten year period from 1935 until 1946 there were 2,724 white patients and 1,800 Negro patients admitted to the urologic service of the Hospital Division of the Medical College of Virginia. Of these, 637 white patients and 121 Negro patients had urinary calculi. Five urologists are privileged to treat patients on the private floors of the hospital for white patients, while relatively few Negro patients secure private accommodations. Elimination of private patients would greatly alter this ratio. The distribution of stones in the Negro is similar to that usually reported in white patients. There were 62 patients with renal calculi, 52 with ureteral calculi and 20 with stones in the bladder (table 2). (The apparent discrepancy in the number of these patients and in the total mentioned previously results from the fact that several patients had stones in both kidney and ureter or in the kidney and bladder.) The incidence as to age is likewise similar to that in white patients (table 3). The laboratory data illustrated in table 4, while in many instances incomplete, indicate a decided departure from the laboratory results we usually see in white patients. Approximately half of the patients have alkaline urine. Of 67 Negro patients admitted consecutively to the

Table 2.—*Distribution of Calculi*

Stone in right kidney	18
Stone in right kidney and ureter	2
Stone in right kidney and bladder	1
Stone in left kidney	17
Stone in left kidney and ureter	4
Stone in left kidney and right ureter	3
Stone in left kidney and bladder	2
Stone in both kidneys	15
Stone in right ureter	27
Stone in right ureter and bladder	1
Stone in left ureter	15
Stone in bladder	16

Table 3.—*Age and Sex*

Males............73 Females..........48

Age	Patients
10 to 20	6
20 to 30	24
30 to 40	24
40 to 50	26
50 to 60	19
60 to 70	17
70 to 80	4
80 to 90	1

Table 4.—*Laboratory Reports*

Urinalysis		Phenolsulfonphthalein		Nonprotein Nitrogen	
Reaction		Diminished (15 of these had elevated nonprotein nitrogen)	33	Normal	60
Acid	49	Normal	38	Elevated	20
Alkaline	54	Not mentioned	50	Not mentioned	41
Not mentioned	18	Hematology		Wassermann	
Albumin		Mild anemia	34	Positive	16
Present	69	Severe anemia	6	Negative	61
Not present	32	Normal	81	Not mentioned	44
Not mentioned	20	Bacteriology		Analysis of Stones	
Leukocytes		E. coli	4	Calcium oxalate	8
Rare to few	62	B. lactis aerogenes	5	Calcium carbonate	9
Numerous to abundant	35	P. vulgaris	2	Calcium phosphate	11
Not mentioned	24	Staph. albus	1	Triple phosphate	5
Red blood cells		S. faecalis	1	Ammonium nitrate	1
Present	62	Gram-negative diplococcus	1	Mixed calcium	1
Not mentioned	59	Not mentioned	107	Uric acid	2

medical service of the Hospital Division of the Medical College of Virginia, 18 had alkaline urine on admission and 7 had pronounced pyuria. The relationship of alkaline urine and infection to urolithiasis in the Negro is further illustrated in the analysis of stones, which shows that a great majority are of the alkaline variety (figs. 1 and 2). Almost a third of our patients had rather severe infection of the urinary tract, and the renal function tests indicated a high percentage of renal damage. Forty of these patients had some degree of anemia and 16 had a positive Wassermann test.

Twenty-six of these patients had been previously admitted to the hospital for some disease of the urinary tract, the majority of them because of stone (table 5). This high incidence of readmission results to a large extent from the reluctance of the Negro, in many instances, to submit to an operation and to the difficulty of persuading him to return for adequate postoperative treatment. Once free of pain he is rarely seen until he is again incapacitated.

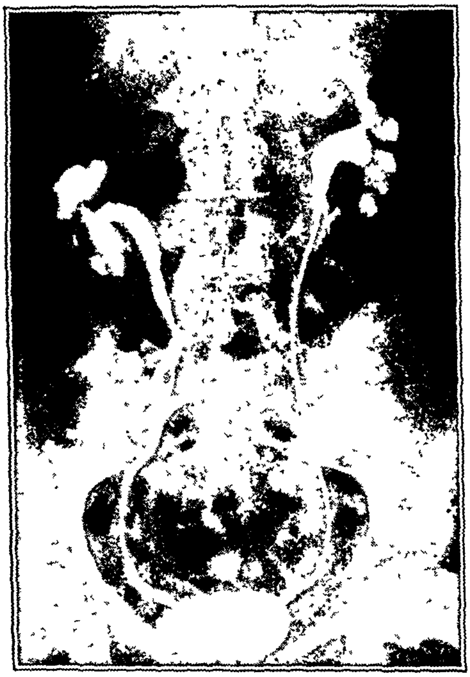

Fig 2.—Pyelogram, same case as figure 1

The treatment varies considerably from that usually considered advisable in white patients (table 6). The percentage of nephrectomies is extremely high. It was required in 20 of the 62 patients with stone in the kidney, while only 26 of 190 white patients with renal calculi treated by me in a small private hospital during the same period required nephrectomy. This is partly accounted for by the fact that conservative surgery is frequently not as successful in Negro as in white patients. Most of the renal calculi in Negroes are phosphatic; renal damage is considerable before the patient applies for treatment, and he will seldom submit to the tedious regimen desirable after conservative operations. The large number of nephrolithotomies as compared with pyelotomies is further evidence of a more severe type of calculosis. Fourteen of these patients had staghorn calculi and 10 had multiple calculi in the kidney. Four patients admitted with far advanced renal infection and bilateral calculi died of uremia and sepsis within a few days. Deaths did not occur among the 50 patients treated for stone in the ureter. Operation was performed on a rather large percentage of these. Negro patients are not willing to persist in efforts to remove ureteral calculi by cystoscopic methods to the same extent as are the white patients and will frequently leave the hospital against advice when their pain is relieved. Furthermore, the Negro patient cannot be depended on to return at regular intervals for ureteral manipulations.

Table 5.—*Previous Admissions*

	Patients	Treatment	
Stone in kidney	5	Nephrolithotomy	3
		Nephrectomy	2
Stone in ureter	5	Ureterolithotomy	3
		Cystoscopic treatment	2
Perinephritic abscess	3	Incision and drainage	3
Pyelitis	2	Chemotherapy	2
Hypertrophy of prostate	4	Transurethral resection	4
Stone in bladder	4	Litholapaxy	3
		Cystotomy	1
Rupture of bladder	1	Suprapubic cystotomy	1
Stricture of urethra	2	External urethrotomy and incision of stricture	2

The highest operative mortality was in the group of patients with stones in the bladder. With 3 exceptions—1 following injury to the bladder and 2 complicated by stricture of the urethra—they were all elderly persons. Ten of them were also operated on for hypertrophy of the prostate. There were 2 women, both of whom had large cystoceles.

It is not wise to draw any definite conclusion from a small group of patients in a limited area, but from our experience it is evident that urolithiasis is not an unusual condition in the American Negro. Whatever natural immunity the Negro may have is certainly modified by his mode of living and the frequent occurrence of infection in the urinary tract. From our observations the Negro presenting himself with stones in the urinary tract has a high incidence of alkalinuria and infection.

Table 6.—*Treatment*

		Well or Improved	Not Treated	Died
Kidney				
Nephrectomy	20	19	..	1
Nephrolithotomy (bilateral)	14	13	..	1
Pyelolithotomy	9	9	..	..
Signed release	5	..	5	..
Treatment not advised	14	..	10	4
Ureter				
Ureterolithotomy	21	21	..	..
Cystoscopic treatment	17	17	..	..
Stone passed spontaneously	8	8	..	..
Signed release	4	..	4	..
Bladder				
Cystotomy	9	7	..	2
Litholapaxy	9	8	..	1
Signed release	2	..	2	..

Most of the stones are of the alkaline variety. The distribution of the disease in Negroes as to sex and age is similar to that in the white race. Because of the difficulty in getting these patients to return for adequate follow-up treatment, more radical surgery usually is required than is necessary in the white patient.

ABSTRACT OF DISCUSSION

Dr. Wirt B. Dakin, Los Angeles: It is not exactly known why the Negro has fewer urinary calculi than the white man. At first it is difficult or impossible for foreigners to compete with natives of high altitudes or extremely cold climates. In time, nature helps the newcomer to adjust himself in the manner of a native. Is it not possible, then, that in his former home—Africa—nature provided the Negro with some special bodily mechanism or metabolism which helped to prevent urinary calculi, and that the American Negro inherits this protection? However, with better opportunities or more complete urologic investigation, calculi in the American Negro may be found to be more common each year.

Dr. Monroe Wolf, New Orleans: I became interested in calculi in the Negro in 1925 when I had occasion within a period of four or five months to see at least 3 cases in the outpatient clinic of Touro Infirmary, and in the Women's Dispensary. The 1 at Touro was a Negro woman about 50 years of age; she had bilateral staghorn calculi and refused surgical intervention. The other 2 were a woman in the fifties with multiple calculi in a urethral diverticulum and a Negro woman in the forties with a calculous pyonephrosis of the kidney. I took the opportunity before leaving New Orleans to collect the statistics in the Charity Hospital over a period of twenty-one years, 1925 through 1945. In a total of 3,266 calculous patients, 2,654 were white men and women; 612 were Negro men and women, or 23 per cent more Negro than white. The population of Louisiana is approximately 1,620,000, with 65.03 per cent white as compared to 34.97 per cent, or 856,000, Negro. The incidence of 612 cases in the Negro in a total of 3,266 gives a total percentage of 18.77. The admissions of men to the hospital over this period were 257,170. The incidence of calculi among the white was 1,727, or .67 per cent of the admissions. The Negroes have only one institution to which they can go for hospitalization besides Charity Hospital in New Orleans, namely the Flint Goodridge Hospital.

There were 105 cases of bilateral renal calculi in men, 37 in the Negro—some of these were staghorn, which gives a percentage of 35.24 of the calculi in the Negro man. There were 36 cases of bilateral culculi in women, 10 in the Negro, or 27.7 per cent.

Dr. Victor D. Lespinasse, Chicago: One of the factors in the Negro immunity may be that the Negro is a native of a hot country, and the relation between fluid intake and fluid excretion through the skin is different in the Negro than it is in an Anglo-Saxon who comes from a colder country. It is well known that the kidney gets the last call for water when one perspires a great deal, and the urine is high in concentration and small in amount. The Negro, subject to the hot climate of Africa, may have an increased ability to conserve water, or the kidney may have greater ability to seize water; hence his urine is not as concentrated and the incidence of urinary calculi is less.

Dr. Austin I. Dodson, Richmond, Va.: I want to commend Dr. Wolf on his painstaking investigation and report.

Skin Grafting.—The split thickness graft has the greatest range of usefulness in the repair of skin loss of all methods of skin transplantation. Three types are to be distinguished: first, the thin split thickness graft, or Ollier-Thiersch graft; second, the intermediate split thickness graft of Blair and, third, the thick split thickness graft. These differ from one another only in the amounts of epidermis and dermis which are taken. At one time it was believed that the Thiersch graft represented merely the epidermal elements of the skin; but all authorities agree that it is somewhat more substantial than that and includes at least parts of the papillae of the skin. Its thickness is usually between 0.006 and 0.01 inch. The intermediate spit thickness graft of Blair varies from 0.012 to 0.016 inch. The thick split thickness graft is from 0.02 to 0.024 inch; it may represent from two thirds to four fifths of all the skin elements present. The intermediate and split thickness grafts have in a large measure displaced other forms of skin transplantation except in special cases.—Leveton, Albert L.: The Surgical Principles of Split Thickness Skin Grafting, *J. Bone & Joint Surg.*, October 1946.

ADDICTION TO MEPERIDINE HYDROCHLORIDE (DEMEROL HYDROCHLORIDE)

Report of Three Cases

HERBERT WIEDER, M.D.
Assistant Surgeon (R), United States Public Health Service
Lexington, Ky.

Numerous patients addicted to meperidine hydrochloride (Demerol hydrochloride) have been admitted to the United States Public Health Service Hospital, Lexington, Ky. Several had been addicted to opiates before becoming addicted to meperidine hydrochloride. Many used this drug and morphine sulfate concurrently. Prior to September 1946 cases of addiction to this drug had not been reported in the American literature, except in persons previously addicted to the opiates. Three cases of addiction to meperidine hydrochloride are here reported. Two patients have never been addicted to any other narcotic drug and 1 used morphine when sufficient meperidine hydrochloride was not available.

REPORT OF CASES

Case 1.—Patient A, a white man volunteer aged 27, had sixteen abdominal operations between 1929 and 1941. He had received a proprietary preparation of the total alkaloids of opium as soluble hydrochlorides (Pantopon) and occasionally morphine sulfate as preoperative and postoperative medication. He emphatically denied experiencing positive pleasure[1] from these injections. He did not develop physical dependence on the drugs, because they were prescribed judiciously by a physician.

During an attack of catarrhal jaundice in the spring of 1945, he was given 100 mg. of meperidine hydrochloride hypodermically every four hours for six weeks. He stated that this medicament produced definitely pleasurable sensations, which were not related to the relief of his abdominal pain. He had never experienced such sensations from the opiate drugs. A "yearning" for the feeling that meperidine hydrochloride produced soon developed. As his catarrhal jaundice improved, the dosage was gradually reduced. At the time of his discharge from the hospital he was free of abdominal pain and discomfort but retained his yearning for the drug's pleasurable effects. He stated that to satisfy his desire for meperidine hydrochloride he began to malinger complaints in order to obtain it from physicians. After a month he found that his usual dose of 100 mg. every four hours was not producing the same degree of pleasure as he formerly experienced. He therefore started to increase his doses of the drug, which he obtained from narcotic peddlers and by prescriptions obtained from numerous physicians. At the time of admission to this hospital, in May 1946, he was taking between 200 and 500 mg. of meperidine hydrochloride hypodermically every three hours. The story of the results of his intense desire to obtain the drug parallels those obtained from many morphine addicts who have abandoned all socially productive enterprises and have directed all their energies to procuring morphine.

The patient described the effects of the drug as follows: "Demerol kicks me right up. It produces feelings I have never had and really desire. It relaxes my insides and I feel good. I forget my worries and feel exhilarated. All aches, pains and nervousness leave me. No other medication ever gave me this type of pleasure." He stated that meperidine hydrochloride abolished his desire for sexual experiences and that "Sexual pleasure is short-lived and easily satisfied; the pleasure obtained

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Approved for publication by the Surgeon General of the United States Public Health Service.

[1] Kolb defined positive pleasure as a result of raising a person above his usual emotional plane; negative pleasure is merely relief from anxiety and pain. Kolb, L.: Pleasure and Deterioration from Narcotic Addiction, Ment. Hyg. 9: 699 (Oct.) 1925.

from Demerol is intense, sustained, and you want to keep that feeling all the time."

After his admission to this hospital, he was pleasant and cooperative as long as he was maintained on 100 mg. of meperidine hydrochloride every four hours. He threatened to leave the hospital against advice when the dose was reduced to 75 mg. every four hours. He remained in bed, was depressed and complained of anorexia, insomnia and abdominal pain after a further diminution in the dose to 50 mg. every four hours. This behavior disappeared when the amount of the drug was increased to 100 mg. every four hours but returned when, unknown to the patient, 15 mg. of morphine sulfate every four hours was substituted for the meperidine hydrochloride. A slow reduction withdrawal of the drug was attempted without success, because the patient left the hospital against medical advice when the dose had been reduced to 50 mg. four times a day.

Case 2.—Patient B, a white woman prisoner aged 44, received opiates for the first time in 1924 while hospitalized for "migraine headaches and sinusitis." She received 60 mg. of codeine sulfate daily for ten days and stated that pleasurable sensations were not associated with the medicament. From 1924 until the present, she has had headaches which were controlled at first by acetylsalicylic acid compounds. After a series of emotional traumas in 1937 her headaches became "unbearable." She then resorted to an occasional oral dose of codeine sulfate, which was prescribed by her physician. She never took more than 60 mg. over a period of a week and experienced only minor relief. She stated that because she was a registered nurse she had access to morphine and administered approximately five injections of this drug to herself over a period of four years. She never injected more than 7 mg. of morphine sulfate at one time. From 1924 until 1946 she had used these medicaments only occasionally, and evidence could not be found in her history of the development of physical dependence, tolerance or habituation to the drug.

In January 1946 she had a headache and took 50 mg. of meperidine hydrochloride hypodermically. This had a twofold effect. It produced the desired analgesia and a sensation of "calmness" which the patient enjoyed. Initially she used 50 mg. of the drug hypodermically once a week. After three weeks she started to increase her doses and to decrease the interval between injections. She did this because she desired to experience the pleasurable sensations, and 50 mg. of the drug no longer controlled the discomfort from her headache. From March 1946 until August 1946, when she was arrested, she was taking between 300 and 400 mg. of meperidine hydrochloride every two or three hours. She obtained it by forging prescriptions and by stealing it from hospital wards and from patients whom she was nursing. Although she knew she would eventually be apprehended, she stated that "the yearning for Demerol surpassed all other considerations."

In discussing the drug's effects she said: "Demerol relieved my nervousness and made me feel normal. It would stimulate me, and I would be able to work without fatigue. I took more and more Demerol in order to experience the wonderful sensations, even more than to relieve my headaches. Although it (the drug) didn't always relieve my headaches, it always gave me extreme pleasure, and I really yearned for it if I couldn't obtain it. Opiates never gave me relief or pleasure. When I can't obtain Demerol, I get irritable, can't sleep and only think about where I can get more."

The patient had not received narcotics for twelve days prior to entering this hospital and did not show evidence of physical dependence after admission. Her history of the period during withdrawal indicated the existence of physical dependence at that time.

Case 3.—Patient C, a white man volunteer aged 30, was hospitalized for three weeks in October 1943 because of virus pneumonia. He received occasional injections of morphine sulfate for pleuritic pain but did not recall positive pleasure derived from the medicament. After his release from the hospital in November 1943 he received 60 mg. of codeine sulfate daily, which dosage was increased to 240 mg. daily because of persistent pleuritic pain. In December 1943 the dosage of codeine was abruptly stopped and 15 mg. of morphine sulfate was administered hypodermically four times a day for two weeks. At the end of that time the medicament was abruptly changed back to codeine, and he remained on 240 mg. of codeine daily until March 1944. During this four-month period he was under a physician's care, and the history lacked evidence of an abstinence syndrome when codeine was substituted for morphine.

In March 1944 he was given 50 mg. of meperidine hydrochloride hypodermically four times a day "to prevent addiction to opiates." Within two weeks of that time his pleuritic pain disappeared, but he continued to take the drug, which he obtained by devious means, because he liked the sensation it produced. From March 1944 until June 1944 he found that it was necessary to increase his dosage repeatedly in order to produce the desired sense of well-being. He eventually reached a dosage of 500 mg. every four hours. He noticed that he became "nervous" while taking 2,500 mg. a day and therefore used between 1 and 2 Gm. of sodium amytal intramuscularly daily. He was unable to obtain meperidine hydrochloride in June 1944 and "experimented" with the use of morphine sulfate in order to find a "satisfactory substitute." The average dose was about 15 mg. of morphine hypodermically four times a day until August 1944. He stated that although he experienced a "heavy quiet feeling" from morphine, he did not have the intense pleasure associated with meperidine hydrochloride. For eight months, between August 1944 and March 1945, he was able again to obtain the drug and he used it, morphine sulfate and sodium amytal at the same time. He never used more than 60 to 120 mg. of morphine sulfate a day but did use between 2,000 and 3,000 mg. of meperidine hydrochloride a day. In March 1945 he was admitted to this hospital for treatment of addiction and left contrary to medical advice after sixteen days. On departure he relapsed immediately to the use of meperidine hydrochloride and morphine. He was taking approximately 60 mg. of morphine and 4,000 mg. of meperidine hydrochloride daily when he was treated in a private sanatorium in July 1945. He left the sanatorium at the end of two weeks on a daily dosage of 240 mg. of codeine and 200 mg. of meperidine hydrochloride orally. He reverted to the use of the latter drug hypodermically after five weeks and used it alone in preference to morphine.

He was taking 3,000 mg. of meperidine hydrochloride a day hypodermically when readmitted to this hospital in June 1946. He did not receive medication for twelve hours prior to admission and demonstrated objective signs of abstinence when admitted. His ability to tolerate large doses of the drug was demonstrated when 500 mg. was administered every four hours and toxic effects did not develop. Any increase in the dose above 500 mg. was followed by anxiety, insomnia and ataxia. In describing the drug's effects he stated: "It gives me relief from tension, makes me feel normal, makes me feel ambitious, there is no other feeling like it." He noticed a decided loss of sexual drive while using meperidine hydrochloride. He stated that he preferred its effects to those of morphine and when given a choice he would always take meperidine hydrochloride. He did not receive the drug after the fifteenth hospital day and left the hospital against medical advice after thirty days.

COMMENT

Himmelsbach[2] stated that addiction to the opiate drugs embraces three related phenomena: First, tolerance, or the gradual decrease in the effect produced by the repeated administration of a drug; second, physical dependence, which is manifest by the appearance of a characteristic illness if the drug is withheld, and third, habituation, or psychic dependence, which implies an intense desire for the repetition of pleasurable effects associated with the use of a drug.

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[2] Himmelsbach, C. K.: I. Clinical Studies of Drug Addiction; II. Rossium Treatment of Drug Addiction, Pub. Health Rep., 1937, supp. 125.

Meperidine hydrochloride should be regarded as an addicting drug in the same class as the opiates because all three phenomena have been shown to occur after its use. Andrews[3] demonstrated that tolerance to the drug's elevating action on the pain threshold develops readily. That tolerance to the euphoric effects developed in the cases reported here is indicated by the fact that all 3 patients had to increase their dosage repeatedly in order to reproduce the pleasurable sensations desired. Patient C had undoubtedly developed a high degree of tolerance to the toxic effects of meperidine hydrochloride, as he was able to take as much as 500 mg. hypodermically at a single dose without any clinical evidence of untoward effects. Himmelsbach[4] demonstrated that physical dependence to the drug develops. A definite abstinence syndrome similar to, but less intense than, the morphine abstinence syndrome appeared following abrupt discontinuation of the drug after it had been administered to former morphine addicts over a period of one or two months. Other investigators[5] found evidence of physical dependence in patients receiving the drug therapeutically. Signs of abstinence, which were relieved by its administration, were evident on admission in patient C. Batterman and Himmelsbach[6] reported that habituation occurred after the administration of 75 mg. of meperidine hydrochloride four times a day for three months but did not give details. Strong psychic dependence occurred in the 3 patients whose histories are given here. This was manifest by their statements of the pleasurable sensations produced by the drug and by the energy they expended and the risks they took to obtain more of it in order to reproduce the euphoric effects.

In September 1946, Anslinger,[7] in a letter to the Editor of The Journal of the American Medical Association briefly described 14 cases of addiction to meperidine hydrochloride, 8 of which appeared to be examples of primary drug addiction. Patients A and B had never been addicted to other narcotic drugs and therefore are to be regarded as primary meperidine hydrochloride addicts. Although patient C received codeine and morphine sulfate for six months prior to becoming addicted to meperidine hydrochloride, he probably can be regarded as an example of primary addiction to this drug. His history is particularly significant because it demonstrates a preference for meperidine hydrochloride over morphine.

SUMMARY

Three cases illustrating addiction to meperidine hydrochloride have been reported. Two cases were examples of primary addiction to this drug. The third case demonstrates the occurrence of preference for meperidine hydrochloride over morphine.

CONCLUSION

Meperidine hydrochloride (Demerol hydrochloride) is an addicting drug. The same precautions should be observed in its use as in the use of the opiate drugs.

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[3] Andrews, H. L.: Development of Tolerance to Demerol, J. Pharmacol. & Exper. Therap. **75**:388 (Aug.) 1942.

[4] Himmelsbach, C. K.: Studies of Addiction Liability of Demerol, J. Pharmacol. & Exper. Therap. **75**:64 (May) 1942; Further Studies on the Addiction Liability of Demerol, ibid. **79**:5 (Sept.) 1943.

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[6] Batterman, R. C., and Himmelsbach, C. K.: Demerol: A New Synthetic Analgesic; Review of Its Present Status and Comparison with Morphine, J. A. M. A. **122**:222 (May 22) 1943.

[7] Anslinger, H. J.: Demerol, Correspondence, J. A. M. A. **132**:43 (Sept. 7) 1946.

Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association
and Hygeia, the Health Magazine
Chicago

(*Continued from page 988*)

(Note.—*Following is the eighth chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of The Journal. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in The Journal. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—Ed.)

CHAPTER 8. THE CIVIL WAR LOOMS

1858

WASHINGTON, D. C.

The Code of Ethics was not merely window dressing; conspicuous in the session of 1858 was an apology by Dr. David M. Reese for having put on the staff of the Blockley Hospital of Philadelphia a physician who had been expelled from the American Medical Association for a violation of the Code of Ethics. The apology of Dr. Reese stirred a tempest; by the third day of the session the delegates were convened as a committee of the whole on a motion to reconsider, and Dr. Reese amended his apology by adding the words that he "regretted the action taken."

Throughout the nation there was great turmoil, for these were the years before the Civil War; but there is nothing in the discussions of the American Medical Association at that time indicating any thought that war was impending. The basic questions leading to the war were not discussed, nor is there any action indicating movement toward medical preparedness.

Most of the discussions were concerned with the reports of the committees on epidemics and on literature. American physicians had begun to take pride in their own publications. Again Austin Flint won the essay contest with a paper on "The Clinical Study of the Heart Sounds in Health and Disease."

The report on medical education was brief; the evidence indicated that standards were slowly improving. The number of scientific contributions was small.

Appended to the permanent transactions of the Association were the complete principles of Ethics, a practice that has been followed since that time.

1859

LOUISVILLE, KY.

In welcoming the members to Louisville in the following year the community took pride in informing the members of the American Medical Association of its two medical libraries containing, respectively, 4,000 and 8,000 volumes.

For the first time at the 1859 convention definite action was taken urging the legislatures of the individual states to pass laws that would control the practice of illegal abortion.

Only six essays had been submitted to the essay committee.

By this time, however, the Association had so modified its original constitution that it became necessary to issue a revision of the so-called "Plan of Organization," so that all the members could understand the various functions and technics concerned in the various committees, boards and other agencies.

Still the transactions say nothing whatever indicating that the nation was trembling on the verge of a great war.

1860

NEW HAVEN, CONN.

By the 1860 session Dr. N. S. Davis thought that a little more order ought to be introduced into the manner of the meeting. A resolution was offered that the morning meetings be devoted to the work of the Association and the afternoon sessions to the hearing of papers and discussions on scientific subjects.

The address of the President, Dr. Henry Miller, brought up openly the question of illegal abortion. On behalf of the American Medical Association, he urged action by legislatures in every state against this practice. Dr. Miller reviewed the growth of the Association and asked for renewed effort toward raising the standards of medical education.

1863

CHICAGO

The thirteenth annual meeting of the American Medical Association had been held in New Haven, Conn., in June of 1860. The next session—the fourteenth—convened in Chicago on June 2, 1863. Early in 1861 the usual notices for the regular meeting were issued. The preliminary arrangements were made. Then, according to Dr. N. S. Davis, "the sectional animosity and wickedness which had been threatening the peace of our country for several years culminated in an open, unjustifiable and monstrous rebellion." Letters were received from most of the active members of the Association asking postponement of the annual meeting. Although there was nothing in the constitution and by-laws to authorize either the officers or any one else to postpone a regular meeting, the committee finally decided to postpone until June 1862. Just about that time the battles of Belmont, Fort Donelson and Shiloh occurred; most of the members of the medical profession were needed in the prosecution of the war.

The meeting was postponed until June 1863; in February Chicago was selected as the place of meeting. Another difficulty now arose: a decision by the convention of railroad officers that there would be no further commutation of railroad fares. However, a special meeting of the railroad executives permitted them to make a commutation rate for attendance on the National Canal Convention, which was held in Chicago at the same time. The delegates to the American Medical Association were invited to sit in the National Canal Convention, where they were recorded as delegates and thereby got free tickets home.

A considerable number of delegates assembled in Bryan Hall; some of the meetings were held in the Methodist Church Block.

Apparently the Surgeon General of the Army had issued an order prohibiting the use of calomel and antimony. The American Medical Association appointed a committee to find out why. Another committee was established to see whether vaccination against smallpox should not be compulsory throughout the United States. Majority and minority reports were received on the use of calomel and antimony in the Army, and the whole subject received a most spirited discussion. A statement from the Surgeon General indicated that the use of both calomel and tartar emetic had been abused; he believed that more harm resulted from the use of both these agents than benefit from their proper administration. Many of the committee thought that this charge by the Surgeon General was entirely unwarranted. They felt that he was giving impressions and that he did not have good statistical evidence to support his opinion. Then, getting even stronger, they said that he had "committed a most grievous offense against the dignity, usefulness and humanity of our profession; that he has heaped unmerited *insult* on an intelligent, scientific and humane corps of army surgeons; that he has injured, in a most serious manner, the regular profession. We regard the order as an unwarrantable assumption of authority and a reckless attempt to cut the Gordian knot of intricate pathology by the exercise of official power." They considered his circular unwise; the withholding of ordinary medicines implied a want of confidence in the skill of physicians; they recommended that he either withdraw the circular or rewrite it.

Another resolution said that the railroads were fast becoming the great medium of land travel and that they were having many serious accidents without good medical provisions to meet them.

A long resolution called attention to the fact that the doctors in the Army were not given adequate rank and demanded that they be placed in a rank in all respects equal to and on the same footing with others officers in the service. This insufficient recognition of medical services by the line officers and the statesmen is a perennial source of dissatisfaction. When the wars end, the civilian doctors receive high praise. But proper status has never been accorded either them or doctors in the regular military services.

At this convention another fundamental action was recognition of ophthalmology as a distinct specialty in the field of medicine. Medical schools were encouraged to establish chairs in this field.

1864

NEW YORK CITY

When the Association met in New York in 1864 Dr. Nathan Smith Davis of Illinois, founder of the American Medical Association, received a reward by his election to the presidency. Apparently this nomination was not satisfactory to all; a resolution was offered to send it back to the nominating committee with the request that the committee nominate at least two persons for the presidency, to be elected by ballot. This resolution was lost and Dr. Davis was elected.

Only one resolution on the war seems to have been offered at this session, a memorial to the President of the United States respecting the necessity for the organization of an ambulance system for the U. S. Army.

More than thirty-five committees brought reports on all sorts of subjects, both scientific and political, and there were reports from the usual standing committees.

Again as the session ended there was a resolution from New York urging the President of the United States to take such action as shall cause "all medicines and medical and surgical instruments and appliances to be excluded from the list of articles called 'contraband of war,' and that such articles in any quantity may be purchased by any person in any state of the Union, and may be conveyed beyond our lines under a flag of truce" to the people in the Southern blockaded cities. Furthermore, it was resolved that "every member be requested to use all of the influence in his power in stripping this fratricidal war of some of its unnecessary horrors and thereby to inaugurate the reestablishment of more kindly feelings, and to smooth away some of the obstructions to the reconciliation of our misguided brethren." Of course there were no delegates from south of the Mason and Dixon Line at the convention. However, one physician moved promptly to lay this highly idealistic resolution on the table. Another physician moved to add the word "indefinitely." That was passed.

By this time, moreover, there had begun to be some dissatisfaction with the nominating committee which offered just one nomination for president. A resolution was offered to amend the by-laws providing for nominations from the floor. The question was raised of the right of Dr. William Thomas Green Morton to receive any vast sum for his discovery of anesthesia or for a patent on anesthesia, and the delegates voted unanimously to oppose such actions.

In the *Medical and Surgical Reporter*, a weekly medical journal published in Philadelphia, the issue for Jan. 14, 1865 made a critical review of the progress of the American Medical Association. It suggested omission of proofreading by authors to hasten publication of the Transactions. The Philadelphia editor pointed out the undemocratic character of the technic of choosing delegates. A large county medical society near the place of the meeting could dominate the session. He wanted to do away with the nominating committee. And, he ended, "It is of great importance that the machinery of the Association be made as perfect as possible, for we believe that, rightly managed, it can be made to exert very great influence for good on the profession of this country and of the world."

(To be continued)

Diagnostic Roentgenology.—Five epochal contributions to medicine, spaced over two centuries of time, represent the beginning of physical diagnosis as we know it today. In 1628 Harvey first described the circulation of the blood. Van Leeuwenhoek introduced microscopy in 1670. In 1761 Auenbrugger fathered percussion, and the stethoscope was placed in the hands of physicians by Laënnec in 1819. The ophthalmoscope, first of a long succession of instruments for direct visual diagnosis, was produced in 1851 by Helmholtz. In contrast to this slow rate of progress, as judged by the tempo of our recent medical developments, the discovery of x-rays in the early winter of 1895 gave birth to a unique system of physical diagnosis which promised to carry "inspection" far beneath mere surface markings and threatened to challenge the supremacy of percussion and auscultation in the matter of determining the compactness of deeply situated tissues and organs. Within three decades, diagnostic roentgenology had become established as a vigorous and well respected medical specialty. Thirty-nine years after Roentgen's discovery, American physicians who were especially trained in the new diagnostic method were being certified by a specialty board in radiology.—Hodges, Fred Jenner: Medical Implications of Atomic Energy, *J. Michigan State M. Soc.*, October 1946.

Clinical Notes, Suggestions and New Instruments

GUILLAIN-BARRÉ SYNDROME TREATED WITH NEOSTIGMINE

CHARLES E. TEST, M.D.
Indianapolis

In May 1946 Shaffer[1] reported in THE JOURNAL for the first time on the use of neostigmine in the treatment of the Guillain-Barré syndrome (virus encephalomyelitis). Since that time, further reports have not been forthcoming, and it therefore seemed worthwhile to present additional information on the subject.

REPORT OF CASE

Mrs. M. B., a white woman aged 22, was admitted to the hospital on May 31, 1946 complaining chiefly of headache, stiffness of the neck and a generalized feeling of numbness. She had been in good general health until about two weeks prior to admission, when a "head cold" developed which was characterized by nasal congestion, sneezing and frontal headache of moderate severity, without fever or other constitutional symptoms. For a week she continued her usual daily activities, but on May 22 she felt generally ill and weak. She went to bed at this time and began to experience continuous severe pain in the upper part of the back and neck, together with occipital headache. On the following day she noticed numbness of the second, third and fourth toes of the right foot, and by May 29 her entire body felt numb. On this day she also became nauseated and vomited on two occasions. The vomitus was dark green in color. She had urinary incontinence at this time. According to the patient there had been no elevation of temperature throughout any part of her illness.

Data on Cerebrospinal Fluid

	5/31/46 (On Admission)	6/3/46	8/11/46
White cell count (per cu. mm.)	0	10	2
Red cell count (per cu. mm.)	0	0	0
Pandy test	..	4+	4+
Sugar (mg./100 cc.)	57	73	76
Total protein (mg./100 cc.)	90	312	408
Wassermann	Negative	..	Negative
Gold curve	4443310000	..	5555544433
Culture	Negative	Negative	Negative
Initial pressure	60 mm.	100 mm.	..

The past history was essentially noncontributory. A tonsillectomy had been performed in 1940 without complications. In January 1946 she gave birth to a premature male infant. Labor and the postpartum course were apparently normal.

On admission the oral temperature was 99.2 F., the pulse rate was 96, the respiratory rate 20 and the blood pressure 120 systolic and 80 diastolic. The patient did not appear acutely ill. There was pain on flexion of the neck, but true rigidity was absent. The pupils reacted normally, and there was no papilledema. The pharynx was not injected, and there was no cervical lymphadenitis. Examination of the heart and lungs revealed essentially normal conditions. The abdomen was generally tender on examination, and the abdominal reflexes could not be elicited. The biceps and triceps reflexes of the arm were normal. The knee jerks were elicited only after reenforcement; the ankle jerks were normal. The great toe reflex was not present, and other pathologic reflexes could not be elicited. There was no definite sensory loss on neurologic examination. Function of the cranial nerves appeared to be intact.

The laboratory data on admission May 31, 1946 were as follows: Examination of the blood revealed a hemoglobin content of 14.0 Gm. per hundred cubic centimeters and a white blood cell count of 6,350, with a differential count of band cells 5 per cent, adult polymorphonuclears 61 per cent, lymphocytes

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From the Department of Medicine, Indiana University School of Medicine.

[1] Shaffer, J. O.: The Use of Neostigmine in the Treatment of the Guillain-Barré Syndrome, J. A. M. A. **131**: 285 (May 25) 1946.

30 per cent, large monocytes 3 per cent and eosinophils 1 per cent.

Urinalysis of a voided specimen showed the specific gravity to be 1.030, with the reaction neutral, albumin present in a faint trace, sugar none, casts none, pus cells 2 to 6 and red cells none. The data on the cerebrospinal fluid is given in the accompanying table.

On June 1, 1946, twenty-four hours after admission, it was noted that palsy had developed on the left side of the face. On June 3, 1946 neurologic examination revealed the persistence of the left facial paralysis and diminution of all deep tendon reflexes but failed to reveal other abnormalities, although the patient still complained of numbness over the body and pain in the back of the neck and in the occiput. During the succeeding weeks she complained a great deal of headache and generalized aching pains. At times pain and spasticity of the arms were so severe that she was unable to feed herself. She was constipated and enemas were required. However, the facial paralysis improved decidedly. The results of blood counts and urinalyses remained within normal limits.

By July 14, 1946 objective evidence of neurologic disturbance in the form of reflex changes or gross paralysis was no longer present. However, the patient had severe pain with tenderness, muscle spasm and weakness of both legs and with less severe involvement of both arms. She was irritable, easily upset and in need of frequent anodynes and sedatives. Movement of the legs was so painful that any attempt to walk was out of the question.

On July 15 the patient was given injections of neostigmine methylsulfate in 1:2,000 solution, 1 cc. three times a day subcutaneously. Within four hours after the initial dose she was able to sit in a chair and stated that she had less pain than at any time since entering the hospital. On July 17 the dose of neostigmine methylsulfate was increased to 2 cc. injected three times a day. Atropine sulfate 1/150 grain (0.0004 Gm.) was given hypodermically with each dose to counteract the undesirable side effects of the neostigmine, as recommended by Shaffer. Three days after the initiation of treatment with the drug she was able to walk with assistance, and by July 22 she was able to walk alone from bed to chair in her room. On July 26 the patient was discharged from the hospital. At that time she was easily able to walk alone, with a normal gait.

It is felt that in this instance the use of neostigmine methylsulfate contributed greatly to the rapidity of the patient's recovery and materially shortened her stay in the hospital.

1040 West Michigan Street.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following report. Howard A. Carter, *Secretary.*

OTARION A-3 HEARING AID ACCEPTABLE

Manufacturer: Otarion Hearing Aid Company, 448 North Wells Street, Chicago

This instrument is of the vacuum tube type. The microphone and amplifier unit is of molded plastic. It measures 5/8 by 2½ by 3½ inches (1.6 by 6.4 by 8.9 cm.) and weighs 3.6 ounces (103 Gm.). In the tests it was energized with a 1.5 volt A battery and 45 volt B battery. The unit submitted had a single combined volume control and on and off switch.

Batteries: The current drain of the A battery (1.5 volts) was 70 milliamperes and of the B battery (45 volts) 1.2 milliamperes.

Acoustical Gain: Measurements of the gain in decibels in the pressure level set up in a 2 cc. coupler over that at the microphone of the hearing aid showed the following results: The gains are for an input sound pressure level of 50 decibels above 0.0002 dyne per square centimeter.

Frequency	256	512	1024	1800	2048	3100	3500	4096	cycles/sec.
Volume control									
½ On......	21	29	35	64	39	43	36	33	decibels
Full On......	34	42	50	45	53	53	49	45	decibels

Measurements showed that the instrument produced sound pressure levels reasonably free of distortion, ranging from 115 to 135 decibels above 0.0002 dyne per square centimeter over the frequency range from 256 to 4,096 cycles per second. The measurements made are in fair agreement with the data submitted by the manufacturers.

Articulation: The usual articulation and intelligibility tests were made with a hard of hearing subject, with the following results: Syllable articulation 96 per cent, sentence intelligibility 98 per cent. The whispered voice was heard and understood at a distance of 5 feet in a quiet place with the volume control set at approximately one third of full volume.

The instrument is well made throughout and is fairly free of internal noise.

The Council on Physical Medicine voted to accept the Otarion A-3 Hearing Aid for inclusion in its list of accepted devices.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

PENICILLIN (See New and Nonofficial Remedies, 1946, p. 212).

The following dosage forms have been accepted:

Abbott Laboratories, North Chicago, Ill.

Penicillin Sodium: 500,000 units.

Lakeside Laboratories, Inc., Milwaukee

Penicillin Sodium: 20 cc. vials containing 200,000 and 500,000 units.

Penicillin Calcium: 20 cc. vials containing 200,000 units.

The Wm. S. Merrell Company, Cincinnati

Penicillin Sodium: 500,000 units.

Chas. Pfizer & Co., Brooklyn

Penicillin Calcium: Bulk. Marketed in bottles containing approximately one billion units each.

Penicillin Sodium: Bottles containing 200,000 and 500,000 units.

Crystalline Penicillin Sodium: 100,000, 200,000 and 500,000 unit bottles and bulk in bottles containing approximately 1 billion units.

SECONAL SODIUM (See New and Nonofficial Remedies, 1946, p. 534).

The following dosage forms have been accepted:

Eli Lilly & Company, Indianapolis

Suppositories Seconal Sodium: 0.2 Gm.

Seconal Sodium Ampuls: 0.25 Gm. and 0.5 Gm. Dry powder used to prepare a 5 per cent solution by the addition of 5 cc. or 10 cc., respectively, of sterile distilled water.

Seconal Sodium Elixir: Each 100 cc. contains approximately 0.44 Gm. of seconal in a vehicle containing alcohol, glycerin, water and aromatics; methenamine is present for the purpose of increasing the solubility of the seconal.

ALUMINUM HYDROXIDE GEL (See New and Nonofficial Remedies, 1946, p. 405).

The following dosage form has been accepted:

William H. Rorer, Inc., Philadelphia

Aluminum Hydroxide Gel: 355 cc. and 3.79 liter bottles. Contains the equivalent of 3.6 to 4.4 per cent of aluminum oxide.

ASCORBIC ACID (See New and Nonofficial Remedies, 1946, p. 631).

The following dosage form has been accepted:

The Harrower Laboratory, Inc., Glendale, Calif.

Tablets Ascorbic Acid: 100 mg.

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SATURDAY, DECEMBER 28, 1946

CHOLERA

Mortality rates for cholera as recorded in various epidemics in the past have reached 50 to 70 per cent. Experiences with cholera in World War II demonstrate that it may be robbed of much of its terror by proper treatment. Reimann[1] believes that, if all mild, unrecognized cases of cholera could be included in the statistics, the mortality rate would be less than 50 per cent. When promptly and properly treated the disease is short and its mortality low. In a carefully controlled series of 140 cases of epidemic Asiatic cholera treated in a hospital at Chungking, Reimann reports a mortality rate of only 5 per cent and the average duration of attack four days. The low mortality rate he ascribes to prompt, vigorous, controlled rehydration and the restoration of mineral metabolites. Each patient on admission was given an intravenous or intraosseous infusion of 1,000 to 2,000 cc. of warmed isotonic solution of sodium chloride. The amount was determined by the size of the patient and the degree of dehydration as measured by the specific gravity of the blood. About 300 cc. of a 2 per cent sodium bicarbonate solution was added to each injection to combat acidosis when collapse was present or threatened. The patient was also given 50 cc. or more of 1 per cent solution of sodium bicarbonate to drink every fifteen minutes during the acute stage. Patients were urged to drink water or tea and were given liquid, then solid food as soon as they desired. Amazing improvement usually came during or after rehydration, with return to consciousness, with recovery from collapse, hypotension, hypothermia, purging, vomiting and cyanosis, with cessation of cramps, with an increase of urine and with filling out of the shrunken skin. The average duration of the disease in 56 patients treated with rehydration and remineralization alone was 4.6 days; in 30 with sulfaguanidine, 3.8 days, and in 31 with sulfadiazine, 3 days. In 8 patients selected for the severity of their attack and treated on the first day of the disease with streptomycin, the average duration was also 3 days.

Reimann believes that the simple administration of salty water reduces the duration of the disease to a few days and the mortality rate to 5 per cent, and therefore there is hardly any need for specific therapy unless it can be shown to abolish the carrier state sooner. Neither the sulfonamides nor streptomycin did. The duration of the presence of viable vibrios during convalescence in the stools of patients not treated with drugs, in patients treated with sulfonamides and in those treated with streptomycin was about the same. Other than a prompt reduction in the number of vibrios and slight shortening of the attacks, Reimann did not find any evidence that streptomycin given orally or parenterally influences the course of the disease.

Reimann's report contrasts strikingly with that of De Wardener[2] on a cholera epidemic among prisoners of war in Siam. The case mortality among the soldier prisoners of war under unfavorable conditions and without treatment averaged from 50 to 60 per cent. Among the 250 sick Dutch troops in the same camp there was only 1 case of cholera. Though they were subject to dysentery and deficiencies to the same extent as the British, the incidence of cholera among the Dutch troops was negligible. The Dutch doctors ascribed this immunity to the yearly cholera inoculations given to all Dutch troops in Java.

Epidemiology Unit No. 50[3] reports a study of cholera in Calcutta. Some 400 patients were divided into four groups, group A being treated with sulfaguanidine, group B kept as a control, group C treated with sulfadiazine, group D treated with penicillin and group E treated with sulfadiazine and penicillin combined. Probably the most striking effects were due not to the chemotherapy but to plasma transfusions. Of 35 severely ill patients treated with plasma plus chemotherapy, not 1 died. Of 19 similar patients treated with chemotherapy alone, 3 died, and of 24 control patients, 23 died. This investigation likewise supports the statement that chemotherapy with supportive treatment, that is, utilizing rehydration, will effectively lower the expected death rate in cholera. The addition of adequate amounts of blood plasma to the therapy of cholera will definitely improve the chance of recovery.

DELAYED PRIMARY MALARIA

The Journal has directed attention in previous editorials to the problem of malaria in military and civilian personnel who have been in endemic areas during the war. Falciparum malaria, with few exceptions, is definitely cured during the acute attack and does not tend to recur. Vivax malaria, by far the most widespread type of malaria among returning soldiers, appears to be well controlled by quinacrine or quinine during the acute attack but recurs in a large percentage of cases. A delayed primary attack may occur after discontinuance of suppression as the first clinical manifestation of malaria.

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[1] Reimann, H. A.; Chang, G. C. T.; Chu, Liang-Wei; Liu, P. Y., and Ying Ou: Asiatic Cholera, Am. J. Trop. Med. **26**: 631 (Sept.) 1946.

[2] De Wardener, H. E.: Cholera Epidemic Among Prisoners of War in Siam, Lancet **1**: 637 (May 4) 1946.

[3] Epidemiology Unit No. 50: Report on Cholera Studies in Calcutta, U. S. Nav. M. Bull. **45**: 1049 (Dec.) 1945.

Most delayed primary attacks are clinically indistinguishable from later relapses of vivax malaria. However, occasionally a difficult diagnostic problem is presented because of (*a*) the absence of a previous history of malaria, (*b*) greater incidence of negative smears or of extremely low parasite counts at the onset of the attack, (*c*) absence of characteristic physical findings and (*d*) an unusual onset in some cases, for example, irregular fever without chills and with negative smears or severe abdominal pain, tenderness, nausea and vomiting before the occurrence of the paroxysm.

Four army investigators[1] have recently reported studies of 169 cases of such delayed primary attacks and 486 cases of later relapses carefully observed in the tropical disease section of Moore General Hospital. During the acute attack various antimalarial drugs were used. After subsidence of the acute attack observations were continued until relapse or for one hundred and twenty days. During this time antimalarial drugs were not given and smears were examined twice weekly. The mean time interval in 101 patients of this series was forty-one days between the discontinuance of suppressive medication and the initial attack. The range was from nineteen to sixty-three days, a standard deviation of 22.2. In other words, some two thirds of delayed primary attacks will occur between approximately the third and the ninth week after the end of suppression. Contributing to these variations were differences in suppressive regimens used in endemic areas and variations in the time required for quinacrine plasma concentrations to drop to minimal effective levels after cessation of medication. In addition, during suppressive treatment recurrences of malarial activity may occur without clinical manifestations of the disease as long as the plasma concentration of quinacrine remains at an effective level. With discontinuance of suppression and fall of plasma quinacrine concentration the time of occurrence of the clinical attack will then depend on the periodicity of the infection in the individual and on the time of the last preceding episode of suppressed malarial activity.

The authors also found that 54 per cent of the delayed primary cases gave parasite counts less than 1,000 per cubic millimeter, whereas this was true in only 31 per cent of later relapses. Despite these lower initial parasite counts, the rate of parasite clearance under treatment was somewhat slower in the delayed primary attack than in the later relapse, and fever was less readily controlled. These findings suggest a diminished sensitivity to the malaria parasite and the development of some immunity in the course of recurrent vivax malaria.

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[1] London, Irving M., and others: The Delayed Primary Attack of Vivax Malaria, New England J. Med. 235:406 (Sept. 19) 1946.

CANCER MORTALITY IN SWITZERLAND

Cancer mortality for Zurich has increased since 1900, owing, as elsewhere, to prolongation of the life span of the general population and not to an increased incidence of cancer among people of the same age. This statement of Schinz and his associates[1] is supported by evidence that the total cancer mortality for both sexes is actually lower when calculations are corrected according to prolongation of the life span. The probability that death from cancer will occur before the sixtieth year of age has decreased for both sexes. Probability of death from cancer occurring between the ages of 60 and 75 years has diminished for women, but a similar change for men could not be ascertained. Death from cancer occurring after the age of 75 has increased for both sexes. When compared to other causes of death, figures for cancer have increased for all age groups and for both sexes.

Cancer of the stomach occupies first place in order of frequency in men, with cancer of the esophagus second. In women cancer of the stomach is first in order of frequency, with cancer of the breast second since 1926 and cancer of the uterus third. Prior to 1926 cancer of the uterus occupied second place and cancer of the breast third. Probability of death from cancer mounts with increasing age for all the important cancer localizations except for cancer of the lung. Men with a tendency to pulmonary cancer are eliminated through death before reaching the age of 75 or more years. Predisposition to cancer varies considerably for different age periods. The relationship between cancer and age is most definite in cancer of the prostate, while pulmonary cancer shows the least dependence on age. Cancers of the esophagus, the stomach, the colon and the rectum occupy a middle position between the two extremes. In women a definite age predisposition is noted in cancer of the stomach, the colon and the rectum and the least definite age predisposition in cancer of the breast, the uterus and the ovaries. Pulmonary cancer in men and cancers of the breast, the uterus and the ovaries in women are regarded as "early cancers"; cancer of the digestive tract, and particularly cancer of the prostate, are considered as "late cancers." The authors found a notable decrease since the turn of the century in the incidence of cancer of the stomach in men aged 30 to 74, a rather definite increase in pulmonary cancer in men from 45 to 74, a decrease in the incidence of cancer of the esophagus in men from 45 to 74 and an increase in men past 75. A definite decrease was noted for cancer of the stomach for women aged 30 to 74, an increase in breast cancer particularly for women from 45 to 59 and a decrease of uterine cancer for all age groups. The general cancer mortality of Switzerland as a whole is analogous to that of the city of Zurich.

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[1] Schinz, H. R.; Rosin, S., and Senti, A.: Entwicklung und Stand der Karzinomsterblichkeit in Zürich, in der Schweiz und im internationalen Vergleich, Schweiz. med. Wchnschr. 76:743 (Aug. 17) 1946; II. Karzinomsterblichkeit in der Schweiz, ibid. 76:779 (Aug. 24) 1946.

Vital statistics in Switzerland are carefully kept so as to include as far as possible all fatalities caused by cancer. The same cannot be said for some of the other European countries, where many cancer deaths are probably listed as due to old age. To compensate for this defect the Swiss experts adopted the rule of adding one fifth to the cancer mortality of those countries. Cancer statistics for southern and southwestern Europe —for the countries south of the Alps (Portugal, Spain, France, Italy and Greece)—are among the lowest. It would be erroneous to assume that treatment of cancer is more effective south of the Alps than north of the Alps. The authors suggest that a comparison of the incidence of cancer among the colonial populations of European descent might show whether this difference depends on geographic factors or on genetic differences of various nations.

Current Comment

THE COUGH SYRUP

Boyd[1] has summarized investigations extending over the past six years on the pharmacology and therapeutic rationale of cough syrups. This form of medication is almost as old as medicine itself, and the use of syrups to control cough has been purely empirical. On the assumption that the beneficial effects of this form of medication result from an expectorant action, Boyd and his colleagues have investigated the effects of various syrupy mixtures on animals and measured the amount of fluid produced in the respiratory tract following oral administration of these remedies. Simple syrup increases the output of respiratory tract fluid and exerts a demulcent effect on the mucosa of the pharynx. This action is short and is not observed if the syrup is introduced directly into the stomach. So-called expectorant drugs such as acid ammonium salts, thymol, guaiacols, creosote, paregoric, ipecac and iodides do not exert their effects until absorbed from the intestinal tract. Certain of the syrupy vehicles, including wild cherry, squill, licorice and ginger, act like simple syrup in that no expectorant action is seen when administered by stomach tube. Syrup of tolu is an exception, since it appears to produce an increased respiratory tract secretion even when administered by gastric tube. Boyd concludes that the time honored cough syrups do, in general, exert a significant expectorant action and that the syrup per se augments this action for a brief period immediately after oral administration. He leaves unanswered the question of whether converting a "dry" cough to a so-called productive cough is in itself a desirable or rational procedure.

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[1] Boyd, Eldon M.: The Cough Syrup, Brit. M. J. 2:735 (Nov. 16) 1946.

PARKINSONIAN SYNDROME

Recently an examination of the clinical features of 320 cases of Parkinson's syndrome recorded during the present century has been made in an attempt to evaluate the changes that have occurred in etiology and also the modifications in clinical form. The majority of cases of parkinsonism observed from 1900 to 1929, according to Dimsdale,[1] were cases of true paralysis agitans. The symptoms developed in the second half of life, with a modal age of onset of between 51 and 60 years. In more than half of these cases the duration of symptoms had not exceeded two years. The principal symptom and objective sign was tremor involving the right side of the body. Abnormal mental states were rare and were restricted to the older patients. Ocular movements and pupillary reactions were usually normal, and excessive salivation was unusual. Of the 100 cases observed during the 1900-1919 period only 3 juvenile and 2 senile cases were recorded. In the next ten years, from 1920 to 1930, 100 additional cases were studied. Thirty-four resembled the previous group in most clinical features. In 54 of this group the syndrome resulted from an attack of encephalitis lethargica, the sequelae of which were usually immediate. Mental symptoms and disorders of sleep were common. Shakiness was the most general symptom, but rigidity appeared more prominent on objective examination, though right-sided predominance was general. In this group the incidence of excessive salivation was high, and ocular signs consisting of abnormalities of external ocular movement and pupils complicated the parkinsonism. Failure of the pupil to contract on accommodation was common. Eleven of the 100 cases in the 1920-1930 group were classified as indeterminate parkinsonism, which resembled that due to encephalitis in clinical form but differed in that a history of encephalitis was absent. One case of parkinsonism and neurosyphilis was included. From 1931 to 1942, 120 cases were studied. Fifty-two were in the group of typical paralysis agitans and conformed in age, distribution, duration of symptoms and objective signs to the classic type. Of the 24 cases of postencephalitic parkinsonism in this series there was a characteristic long latent period and prolonged duration of symptoms. There were 42 cases of indeterminate parkinsonism. These showed an age distribution suggestive of an etiologic factor incident in young people in the years corresponding to the epidemic of encephalitis lethargica. Rigidity was prominent, and there appeared to be a definite left-sidedness of signs, which was difficult to explain. The clinical significance of the apparently changing picture of Parkinson's syndrome is uncertain. It is well to remember that the cases on which Dimsdale's paper is based come from only three sources in England, namely the University College Hospital, the Maida Vale Hospital for Nervous Diseases and the private records of Dr. Russell Brain. Nevertheless, studies such as this on the changing clinical picture of disease may prove extremely fruitful.

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[1] Dimsdale, Helen: Changes in the Parkinsonian Syndrome in the Twentieth Century, Quart. J. Med. 15:155 (July) 1946.

ORGANIZATION SECTION

PROCEEDINGS OF THE CHICAGO SESSION

MINUTES OF THE SUPPLEMENTAL SESSION OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION, HELD IN CHICAGO, DECEMBER 9-11, 1946

(Continued from page 1015)

HOUSE OF DELEGATES

First Meeting—Monday Morning, December 9 Continued

Report of Special Committee on Executive Session for Consideration of Rich Report

Dr. William Bates, Chairman, presented the following report, which was adopted section by section on motion of Dr. Bates, duly seconded and carried:

The members of the House of Delegates and the officers are all familiar with the presentation of a part of the Rich Report at the San Francisco Session last July.

Since that time this committee was appointed and met with the Executive Committee of the Board of Trustees in September in Chicago. Each member received a copy of the report and it was gone over line by line. In addition, we received reports from various department and bureau heads concerning that part of the Rich Report which referred to their respective departments or bureaus.

After that, this forty-five page report was broken up into six comparatively equal parts for study by the Committee members. On last Saturday, Dec. 7, 1946, we met to correlate the various studies. On Sunday, Dec. 8, 1946, with a preliminary draft of our report practically completed, we met with the Board of Trustees for further consideration.

Today we come before you prepared to present the results of our studies, but in view of the fact that most of you have not seen the original and complete Rich Report, your Committee recommends:

1. That each member of the House of Delegates be given a copy of the Rich Report, also a copy of this committee's report, on a special roll call at the end of this morning's session.
2. That the first order of business on Tuesday be reserved for the report of this special committee of the House of Delegates, and .
3. That it be considered by this House at that time in executive session limited to members of the House of Delegates and officers of the Association, acting as a Committee of the Whole.
4. That each delegate be requested to bring his copy of the Rich Report so that a full, free and complete discussion of this subject may be had.

Copies of the so-called Rich Report and of the report of the special committee referred to in the recommendations were then distributed to each delegate called by roll, and consideration of the reports was ordered for the next day in executive session, the House to sit as a Committee of the Whole.

Report of Committee on Military Rank

Dr. B. R. Kirklin, Chairman, presented the following report, which was referred to the Reference Committee on Miscellaneous Business:

Your committee, which was authorized by the House of Delegates at its annual meeting in San Francisco last July, has inquired into the general situation of military rank accorded to members of the Medical Corps of the United States Army and advises that there is now being formulated a plan for more rapid promotions and higher rank, but it has not yet matured to the point where it seemed wise for us to seek an appointment with the Secretary of War. Furthermore, the Secretary of War has appointed an advisory committee composed of outstanding medical men, all of whom served in World War II. This committee is now in the process of formulating recommendations concerning the Medical Department of the Army.

Among its recommendations will undoubtedly be included that of increased military rank. It is therefore thought advisable for this committee to time our conference with the Secretary of War in such a way that it can do the most good.

Your committee, therefore, requests its continuance with instructions to report back to this body at its annual session in Atlantic City next June.

Report of Committee on Rural Medical Service

Dr. F. S. Crockett, Chairman, presented the following report, which was referred to the Reference Committee on Medical Service:

The second annual Rural Health Conference will be held February 7 and 8, 1947. The first conference, held on March 30, 1946, was reported at the San Francisco meeting. This first conference was largely exploratory affording opportunity for a revelation of mutual interests and the development of a more understanding appreciation of many factors affecting the producer and consumer of medical service in rural areas.

A two day meeting is planned with all organized farm groups invited to participate in discussions and formulation of conclusions in six important parts of the rural health problem. Discussion groups will be organized about the following subjects: (1) Bringing and holding well qualified physicians in rural communities. (2) Hospital facilities and health centers. (3) Voluntary medical prepayment plans. (4) Nursing needs of rural communities. (5) Health councils as agency for promoting rural health. (6) Medical care for lower income groups. The findings and conclusions of these committees will be presented to the full assembly for discussion and action during the morning of the second day. The meeting will terminate with a luncheon addressed by Hon. Melville Broughton, former Governor of North Carolina. After the formal program is closed, the committeemen from all the states will have a closed session for a discussion of problems of mutual interest.

In August the President signed the Hill-Burton Bill for federal assistance in construction of hospitals and other related facilities. Special provision in the bill requires that priority be given to rural areas in greatest need. Assistance consists of grants of one third the cost of approved projects. Since the greatest need exists usually in areas with the least economic resources it is evident that each state will need to develop plans to meet this situation. The bill will assist in building two types of health facilities—hospitals in whole or in part for governmental units, church or other nonprofit corporations, or facilities less than hospitals, often referred to as health or diagnostic centers. The health center must include housing for the local public health service provided by the particular state laws. In addition to this there may be diagnostic laboratory and x-ray, doctors and dentists offices, and beds for emergency cases and normal obstetrics, any one or any combination to suit local needs.

Farmers interested in improving their community want primarily a physician. It is doubtful if much enthusiasm could be stimulated in a public health facility if it did not also do something to bring and hold a physician.

It was the privilege of the chairman of the Committee on Rural Medical Service to act as a member of two of the advisory committees invited to assist the Surgeon General of the Public Health Service and his executive council in the formulation of policy for the administration of the Hill-Burton bill. Every effort is being made to fulfil the intent of the Congress in extending the benefits of this legislation.

The Council on Medical Service has expended a great deal of time and attention on the prepaid medical insurance plans now developing in nearly all the states. Convenience and economy cause first efforts to be directed to employees of industry and it is only after some financial stability and executive "know how" has been acquired that the plans can be offered to rural groups or rural communities. Some few state plans are now exploring this opportunity for service. Blue Cross has enrolled over 1,500,000 rural people and is finding increasing acceptance of its plan. It seems quite evident that prepaid medical and hospital plans will play an important part in making available and more accessible to farmers medical and surgical care in catastrophic illness.

The Bureau of Information has sent a questionnaire to all county medical societies to learn the present need for physicians, especially in rural areas. Many returning medical officers have located in the villages.

The development of cooperative associations and other consumer controlled groups for provision of medical care has received considerable attention. There are some 89 cooperatives in 31 states now operating. This is an interesting experiment in the rural effort to do something constructive from the point of view of the consumer. The medical profession should be concerned in all these plans with the view that a high level of medical care be supplied. Since these groups expect to employ physicians, some minimum standard, or the basic principles involved in such contracts, should be adopted by this House of Delegates for the guidance of physicians entering such employment and for the consideration of employing groups interested in establishing a high standard of medical care.

The Committee on Rural Medical Service is very fortunate in that its members live in and represent the principle rural areas of the nation. This selection has been completed recently by the addition of two new members. It is with pleasure and assurance that this committee welcomes Dr. F. A. Humphrey of Fort Collins, Colo., and Dr. Carl Mundy of Toledo, Ohio, to its labors in behalf of better rural medical service.

Report of Committee on National Emergency Medical Service

Dr. E. L. Bortz, Chairman, presented the following report, which was referred to the Reference Committee on Emergency Medical Service, with the exception of the resolution, which was referred to the Reference Committee on Legislation and Public Relations:

The committee was created by action of the House of Delegates at its annual session in December 1945 to study the experiences of medical officers during the recent war. The following report was adopted:

> The Board of Trustees would recommend to the House of Delegates that it authorize the Board of Trustees of the American Medical Association to appoint a committee of seven to be known as the Committee on Military Service. This committee shall include four civilian physicians who served in the war and three others. The committee will study the many communications that have been received and the suggestions made by physicians in the armed forces. The committee will also formulate policies for recommendations to be forwarded through the Surgeons General to the Secretary of War and the Secretary of the Navy expressing the views of the medical profession in planning for proper utilization of the services of physicians in any national emergency.

Soon thereafter the Board of Trustees appointed the following committee: Dr. Perrin H. Long, Army; Dr. Harold C. Lueth, Army; Dr. Edward L. Bortz, Navy; Dr. James C. Sargent, Navy; Dr. Harold S. Diehl, Procurement and Assignment Service; Dr. O. O. Miller, civilian physicians groups; Dr. V. C. Tisdal, civilian physicians groups. Each of these individuals brought a different point of view to the deliberations of the committee.

The first meeting of the committee, which was an organization meeting, was held March 15, 1946. A considerable number of letters had been sent to the American Medical Association by medical officers drawing attention to certain disturbing problems in the medical activities of the armed forces. The committee reviewed these, and plans to correlate the data contained in them with the results of the questionnaire which is now being distributed.

The committee was of the opinion that a number of problems of importance to the studies were not encompassed in the original title of the committee, i. e., Committee on Military Medical Service, and therefore it was recommended that the Board of Trustees create a new title; accordingly the name was changed to Committee on National Emergency Medical Service. In this way certain aspects of premedical and medical education, activities of the Procurement and Assignment Service and medical care for the civilian population are included in the scope of the committee's investigations.

Your committee desires to state that from the beginning the committee has had the utmost cooperation, assistance and stimulation from the General Manager, Dr. George F. Lull, and the entire Board of Trustees.

On April 26, 1946, the committee met with Surgeon General Kirk and his staff, Surgeon General McIntire, Dr. Warren Draper, Deputy Surgeon General of the United States Public Health Service, and Dr. J. B. Mason, a representative of the Medical Department of the Veterans Administration, for a discussion of certain problems which the committee believed to be important. These included some comments on changes which were at that time under consideration by the medical departments of the Army, the Navy and the United States Public Health Service. The reports of this conference are in the files of the committee and open to any member of the House of Delegates who desires to study them.

A resolution presented to the House of Delegates in December 1945 suggested an investigation of the experiences of medical officers in World War II and recommended that a questionnaire be sent out. This recommendation precipitated the problem of obtaining the most important factual data by means of a questionnaire which would be of value to the committee in ascertaining the degree of utilization of the medical manpower during the war. The mechanics of formulation, distribution, collection and classification of the material made available through the questionnaire has been an expensive procedure and required a trained expert staff for its consummation. The committee was fortunate in obtaining the services of Mrs. Frances Tofield as secretary to the committee, and Dr. Frank G. Dickinson, professional economist, who has just recently become a member of the staff of the American Medical Association.

A pilot questionnaire was sent to 1,000 former medical officers whose names were selected at random. The response was surprisingly large, 470, or 47 per cent, of the questionnaires being carefully filled out and returned to the committee. With the pilot study as a preliminary step, a revised questionnaire was drawn up. These questionnaires are now being distributed to about 50,000 former medical officers, some of whom are still in uniform.

The response to this postwar questionnaire is exceeding expectations. Up to Dec. 6, 1946, 18,000 returned questionnaires had been received . . . exactly three weeks after the mailing of the questionnaires started. Four fifths of the questionnaires are signed, and 1 physician out of 50 attached a letter to his returned questionnaire.

Letters were mailed to 355 key men throughout the country for their "opinion viewpoint" during November, and 85 replies had been received by November 30. The information obtained from letters to these key men will likewise be classified.

The committee desires to discuss its findings with the surgeons general of the three governmental services and the Chief of the Bureau of Medicine and Surgery of the Veterans Administration before submitting its final report to the House of Delegates.

During the course of the committee's deliberations the relationship between the functions of the surgeons general to the civilian medical personnel was discussed.

The selection of men to be surgeons general should, our committee maintains, be made from those available men who are eminently qualified by experience and broad professional contacts and who possess the confidence of the medical profession of the nation on whom they must depend for support.

The following resolution is presented by the committee:

Whereas, The development of a strong and attractive medical service in the Army, the Navy, the Public Health Service and the Veterans Administration is in the best interests of the public welfare; and

Whereas, The development of such services depends on the confidence and intimate collaboration of the medical profession of the nation; and

Whereas, In time of national emergency the Medical Corps of the armed services requires the enlistment of a large number of doctors recruited from civilian practice; therefore be it

Resolved, That the House of Delegates of the American Medical Association recommend the appointment by the Board of Trustees of the American Medical Association of a committee, or committees, of distinguished American physicians who will, as occasion arises, study the qualifications of men available for the positions of Surgeon General of the Army, Navy, Public Health Service or Veterans Administration and advise the President of the United States of their considered judgment.

Respectfully submitted,

Edward L. Bortz, Chairman.
Harold C Lufth
Perrin H. Long.
James C. Sargent.
Harold S. Diehl.
O. O Miller.
V. C. Tisdal.

Report of Committee to Consider Revision of the Constitution and By-Laws

Dr. F. F. Borzell, Chairman, requested permission to present the report of the Committee to Consider Revision of the Constitution and By-Laws on Tuesday morning, which was granted.

Report of Joint Committee for the Coordination of Medical Activities (Committee on Postwar Medical Service)

Dr E. E. Irons, Chairman, presented the following report, which was referred to the Reference Committee on Medical Education:

Following the expressed wish of the House of Delegates, with the concurrence of the Board of Trustees, that the Committee on Postwar Medical Service be continued, a recommendation for continuance was made to the other organizations represented in the committee and was agreed to unanimously. It was recognized, however, that new conditions evidently are arising and the content of the committee's deliberations changing. With this in mind, the name has been changed to Joint Committee for the Coordination of Medical Activities The Joint Committee, as was the Committee on Postwar Medical Service, is made up of committees of the American Medical Association, the American College of Surgeons and the American College of Physicians and of individual "liaison" members representing the following organizations and agencies. Advisory Board for Medical Specialties, American Dental Association, American Hospital Association, Association of American Medical Colleges, Catholic Hospital Association, Federation of State Medical Boards; U S Public Health Service; Veterans Administration; Federal Security Agency; War Department Office of the Surgeon General; Navy Department, Bureau of Medicine and Surgery.

It is well understood by all members of the committee and the organizations which they represent that the work of this committee is advisory only. However, the committee does afford a forum in which the widely diverse problems of American medicine can be discussed in a friendly atmosphere and, where situations justify it, the committee can exercise a considerable influence toward the accomplishment of desirable objectives.

Among the problems which undoubtedly still will require consideration are those of postwar training of veteran physicians and the development of further residency and postgraduate opportunities. Problems of licensure and of medical service in rural communities also are occupying the attention of the committee

Respectfully submitted,

Ernest E. Irons, Chairman

NEW BUSINESS

Resolution on Closer Cooperation Between the Medical and Dental Professions

Dr. C. B. Conklin, District of Columbia, presented the following resolution, which was referred to the Reference Committee on Medical Education.

Whereas, The medical and dental professions have a common interest in the extension of health service; and

Whereas, There is need for closer cooperation between these professional bodies; and

Whereas, The president of the American Dental Association in recognition of this fact has appointed a committee of five dentists to cooperate with a similar number of representatives from the American Medical Association, be it therefore

Resolved, That this House of Delegates authorize the President to appoint a committee of five members of the American Medical Association to cooperate with a similar committee of the American Dental Association and that each state medical association be also urged to appoint a committee for the purpose of bringing about closer cooperation between physicians and dentists

Resolution on Requirements for Approval of Hospitals

Dr. E. V. Askey, California, presented the following resolution, which was referred to the Reference Committee on Medical Education.

Whereas, The problem of hospitalization is urgent now and will be distressingly difficult for an indefinite period of time; and

Whereas, There is apparently a definite plan to limit staff membership in hospitals to diplomates of the various specialty boards, and

Whereas, The limiting of staff memberships and heads of departments of such staffs in hospitals to such diplomates could tend to injure the best interests of the public and the medical profession as a whole; and

Whereas, Of a total of 180,000 physicians in the United States approximately only 22,000 are diplomates of all specialty boards, and limitation by the hospitals ot their facilities to use by these few would work an injustice on other capable doctors and their patients, therefore be it

Resolved, That the House of Delegates of the American Medical Association suggests to the Council on Medical Education and Hospitals and directs it to further the realization of this suggestion, to wit:

The requirements for approval of hosptials shall be so defined that there shall be (1) adequate protection of the rights of all doctors and their patients in obtaining hospitalization to the end that general practitioners as well as specialists shall have access to and use of hospital facilities, (2) that the criterion of whether a doctor may be a member of a staff or a head of a department shall be his actual ability as a doctor and not dependent on special society or board membership, and (3) that the American College of Surgeons be urged to conform to these general policies in their procedures in the standardization of hospitals

Resolution on Sponsoring a National Conference of Officers of County Medical Societies

Dr. H. G. Hamer, on behalf of the Indiana delegation, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

Whereas, Public relations, as pertains to organized medicine, has a most important field of effort in reaching and giving information to and receiving suggestions from the rank and file of doctors who give medical service to the public the country over, and

Whereas, Efforts in this direction have been so successfully carried on by the secretaries' conferences sponsored by several of the state medical societies, and

Whereas, There is no national group at present functioning in this capacity, therefore be it

Resolved, That the American Medical Association sponsor a national conference of officers of county medical societies which shall meet yearly just preceding the annual session of the House of Delegates of the American Medical Association for the purpose of bringing to the annual session the diverse problems of the various localities, the exchange of ideas which would be helpful to the state conferences, in such matters as voluntary health insurance plans, hospitalization plans, construction of new hospitals in needed places and improvement in medical facilities, rural health activities, nursing activities and the activities of the various Councils of the American Medical Association.

Resolution on Fellowship of Members of Permanent Corps of Veterans Administration

Dr. E. H. Cary, Texas, presented the following letter and resolutions, which were referred to the Reference Committee on Legislation and Public Relations, except the part referring to amendments to the Constitution and By-Laws, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

VETERANS ADMINISTRATION
Washington 25, D. C.
December 4, 1946

Department of
Medicine and Surgery

In Reply Refer to:
10CE

Dr Edward H. Cary
1717 Pacific Avenue
Dallas, Texas

Dear Doctor Cary:

There will probably be introduced at the coming meeting of the House of Delegates, American Medical Association in Chicago, a resolution which will allow the doctors of the permanent staff of the VA to become members of the American Medical Association in the same class with the Army and Navy medical personnel.

Previous to this in some places the Veterans Administration doctors were not allowed to become members of the A M A. because they were not considered to have been in practice in the state for at least a year, which, I understand, is a rule in some medical societies Therefore, in many cases our men felt that they were not a part of the American medical profession and were outside the pale This, of course, is not healthy for either the medical profession or the full time medical staff of the VA. Veterans Administration policy is not to allow full time VA doctors to practice medicine outside of their VA duties and therefore they cannot engage in private practice except when called by a practicing physician in consultation or in an emergency Consequently, many of them will be excluded from membership in the Association.

As you know, there are now about 1,000 residents in training within the VA hospitals In order to complete their training it is necessary in many cases for them to have two years of practice and we would like to keep them in the VA hospitals for these two years to serve the veterans confined in the hospitals. These are all men licensed to practice medicine in some state, and if they do not have the advantage of becoming members of the A M. A. many of them will feel that the two years of practice within the VA is a handicap rather than a privilege. We would very much like to have a resolution passed that will give them the privilege of joining the rest of the medical profession in its national associations These men are all veterans who had their medical training interrupted by their military service. Most of them are not settled in any locality permanently and have not made up their minds where they want to settle. Therefore it would be difficult for them to come under the year's practice rule unless the A. M. A gives them the advantage of membership before they have done this year of practice outside the VA hospitals.

We also wish to give our full time men the advantage of close association with the medical profession in their various localities and also give the men devoting their time to private practice the educational advantages which we are offering and intend to continue to offer the VA medical staff. If they could all feel that they were part of the same family, I feel sure that it would result in great benefit to the civilian medical profession and to those associated with the Veterans Administration.

I hope you can see your way clear to promote this resolution for the benefit of all concerned.

Sincerely yours,

Paul B. Magnuson, M.D.
Acting Assistant Medical Director
for Research and Education

Whereas, The Veterans Administration as now constituted has an organized medical staff specifically constituted by an act of Congress; and

Whereas, The number of veterans entitled to medical care because of service connected disabilities is exceedingly great; and

Whereas, The Veterans Administration has sought the advice and cooperated with the American Medical Association in developing methods of administering medical care to the veterans, and

Whereas, Such problems are likely to continue for many years and are of considerable importance to the medical profession, and

Whereas, It would aid in the presentation and consideration of such problems if there were available in the House of Delegates a representative of the Veterans Administration as the Army and Navy medical departments and the U. S Public Health Service are now represented, and

Whereas, Transfer of the permanent corps of the Veterans Administration to various installations widespread throughout the country makes difficult the securing and holding of membership of such members of the permanent staff in county and state medical societies; therefore be it

Resolved, That members of the permanent corps of the Veterans Administration be permitted to apply for Fellowship in the American Medical Association without payment of dues, with the understanding that such Fellowship shall continue as long as the physician concerned continues to be a member of the permanent medical corps of the Veterans Administration and that it does not involve subscription to The Journal or other publications of the American Medical Association, and be it further

Resolved, That the following amendments to the Constitution and By Laws be considered by the House of Delegates with a view to making this action effective

CONSTITUTION AND BY LAWS

Article 5.—House of Delegates

"Section 2—*Composition*—*The House of Delegates* is composed of delegates elected by the constituent associations and by the sections of the Scientific Assembly, and of delegates from the Medical Department of the Army and the Navy and the Public Health Service, appointed by the Surgeon General of the respective department . " should be changed to read

"Section 2—Composition—The House of Delegates is composed of delegates elected by the constituent associations and by the sections of the Scientific Assembly, and of delegates from the Medical Department of the Army and the Navy, the Public Health Service and the Veterans Administration, appointed by the Surgeon General of the respective department "

Article 5.—House of Delegates

"Section 3.—The total voting membership of the House of Delegates shall not exceed 175 The Medical Department of the Army and the Navy, the United States Public Health Service and the scientific sections shall each be entitled to one delegate . ." should be changed to read

"Section 3—The total voting membership of the House of Delegates shall not exceed 175 The Medical Department of the Army, of the Navy, of the United States Public Health Service and of the Veterans Administration and the scientific sections shall each be entitled to one delegate "

BY LAWS

Chapter 1.—Sec. 2 Term—Insert before the last line "Veterans Administration "

Resolution on Study of Child Health Services by American Academy of Pediatrics

Dr William Weston, Section on Pediatrics, presented the following resolution, which was referred to the Reference Committee on Medical Education

Whereas, The American Academy of Pediatrics is making a nationwide study of child health services, and

Whereas, The members of the American Academy of Pediatrics are all members of the American Medical Association, and

Whereas, The purpose and objectives and the scope of study undertaken by the American Academy of Pediatrics conform with the ten point program of the American Medical Association fpr the constructive health of the American people, and

Whereas, This study has been approved by many state medical societies, therefore be it

Resolved, That this study being made by the American Academy of Pediatrics be called to the attention of the House of Delegates of the American Medical Association, that the purpose, objectives, scope and method of study be reviewed by the House of Delegates and that the House of Delegates give its approval to this study

Resolution on Standards Required for Certification by the Specialty Boards

Dr. William Weston, Section on Pediatrics, presented the following resolutions, which were referred to the Reference Committee on Medical Education:

Whereas, The American Medical Association by its rating of institutions according to specialty board certification of its staff members, is directly and indirectly a sponsor of the various specialty boards, and

Whereas, These boards have apparently adopted a policy of increasingly difficult examinations, even delving into detailed pathology, embryology, physiology and physiochemistry; and

Whereas, Many of the examination questions can be more easily answered by recent graduates than by a well qualified specialist who has not had formal courses of study in some years; and

Whereas, This attitude on the part of the board is discouraging to a great number of competent, capable and even skilful men who, in order to avoid the onus of a possible failure, now refuse to apply for certification and thereby deprive recognized hospitals of their service on their staff; and

Whereas, There is a well integrated rumor to the effect that members of certain boards have expressed a determination that the servicemen returning will not find it easy to attain a certification; therefore be it

Resolved, That the said members of the specialty boards be requested to give serious consideration to the acceptance of men who have fifteen to twenty-five and more years solely devoted to their specialty, without demanding too much detailed knowledge of subjects long ago studied; and be it further

Resolved, That the members of said boards be asked to recognize the fact that many contemporaries of servicemen were granted their certification under less difficult and detailed examination while these men were in service and not able to attend the meetings of their boards. And in consideration of this to lighten, rather than make more difficult, entry of ex-servicemen to the boards, especially when the boards have written evidence from colleagues in the applicant's own community testifying as to the applicant's standing in his specialty.

Resolution on Change of Policy of American Specialty Boards

Dr. William H. Halley, on behalf of the Colorado delegation, presented the following resolution, which was referred to the Reference Committee on Medical Education:

Whereas, Certain of the American specialty boards have recently announced discontinuance of their former practice of according credit for preceptorships with a certified diplomate and have ruled instead that every applicant for certification must serve a lengthy residency following his internship; and

Whereas, This recent change in policy constitutes an unfair imposition on many returned medical veterans and other young physicians who find it impossible to obtain such residencies; and

Whereas, It is the opinion of the American Medical Association that the preceptorship is one of the best methods of teaching the art of medicine; and

Whereas, Qualified and experienced preceptors already certified by these boards are available in all parts of the United States; and

Whereas, The art of medicine is frequently neglected in hospital residencies due to overemphasis on the science of medicine; now therefore be it

Resolved, That the House of Delegates of the American Medical Association requests the Advisory Board for Medical Specialties and the several American specialty boards to review and reconsider their policies in relation to residencies and preceptorships in accordance with the foregoing statements.

Resolution on Appointment of Reference Committees

Dr. William H. Halley, Colorado, presented the following resolution, which was referred to the Reference Committee on Rules and Order of Business:

Whereas, The By-Laws of the American Medical Association contemplate the appointment of House of Delegates reference committees from the membership of the House of Delegates; and

Whereas, The duty of reference committees to pass judgment on the activities of elected and appointed officers makes it obviously improper for these committees to be composed of the persons whose actions they are expected to judge; and

Whereas, In recent years the Board of Trustees of the American Medical Association has acted as a reference committee of the American Medical Association House of Delegates to pass judgment for the House of Delegates on actions previously taken by the Board of Trustees; and

Whereas, Official protest of this action has been received from the Colorado State Medical Society; now therefore be it

Resolved, That the House of Delegates of the American Medical Association instructs its speaker to utilize as reference committees of this House of Delegates only committees composed exclusively of elected delegates.

Resolution on Prohibition of Political Activity on Part of United States Public Health Service

Dr. William H. Halley, Colorado, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

Whereas, The United States Public Health Service was created organized and is amply financed for certain specific purposes, namely the promotion of the public health, the prevention of disease, the control of epidemics and the extension of help and advice to state and local communities in these and similar problems of disease prevention; and

Whereas, The United States Public Health Service in wartime has certain additional duties and functions related to the armed forces in assisting them in protection of the nation and its citizens; and

Whereas, Existing federal laws contemplate that regular officers of the United States Public Health Service shall devote their full time to the aforementioned duties; and

Whereas, Certain officers and members of the United States Public Health Service, including its Surgeon General, have within the last year so put aside consideration of the functions and duties for which they were appointed and commissioned as to devote much of their time and energy to political activities, even to the extent that the Surgeon General of that Service has issued written orders to his staff and his officers directing their utterances and thinking on highly controversial questions of medical legislation wholly unrelated to the proper functions of the United States Public Health Service and in opposition to American democratic processes; now therefore be it

Resolved, That the House of Delegates of the American Medical Association condemns without qualification, as a perversion of function and dereliction of duty, political and partisan activities on the part of officers of the United States Public Health Service, including its Surgeon General, and recommends that steps be taken to prohibit political activity on the part of the United States Public Health Service, and that further steps be taken to restore the prestige of this important department of our government in the scientific field for which it was created, organized and financed.

Motion on Mimeographed Resolutions

Dr. A. A. Walker, Alabama, moved that, in view of the fact that the members of the House of Delegates have mimeographed copies of some of these resolutions for their edification and education, the reading of such mimeographed resolutions be dispensed with at this time except by title and that they be referred directly to the reference committees, and the motion was seconded by Dr. A. S. Giordano, Indiana. Dr. Walker accepted an amendment that the reading of such resolutions be dispensed with unless there be an addition to the mimeographed copy of the resolution, and the motion as amended was carried.

Resolution on Rich Report

Dr. James P. Kerby, Utah, presented the following resolution, which had already been taken care of and which the Speaker announced would be taken up in the Committee of the Whole:

Whereas, The American Medical Association has had a complete and presumably competent survey of its public relations made by the Rich Associates; and

Whereas, The report of the Rich Associates apparently contains rather sweeping recommendations; and

Whereas, The contents of this report are unknown to the House of Delegates of the American Medical Association in spite of the fact that said House is the policy making body of the American Medical Association; and

Whereas, It is believed to be unwise for the House of Delegates to approve changes in the American Medical Association without knowledge of what it is that it approves; be it

Resolved, That the delegate to the American Medical Association is hereby instructed to take such action in the House of Delegates of the American Medical Association as will result in the members of that House becoming informed as to the contents of the so-called Rich report of the Rich Associates.

Resolution on Referring all Business to Reference Committees

Dr. James P. Kerby, Utah, presented the following resolution, which was referred to the Reference Committee on Medical Education:

Whereas, At the last meeting of the House of Delegates of the American Medical Association numerous matters were referred to the Board of Trustees as a reference committee; and

Whereas, At least one question was referred to the Judicial Council as a reference committee; and

Whereas, The By-Laws of the American Medical Association clearly set forth the constitution, manner of appointment and duties of the reference committees of the House; and

Whereas, It appears improper that a standing committee of the Association should act as a reference committee to review its own actions; be it

Resolved, That the delegate to the American Medical Association is hereby directed to take such action in the said House as will result in all business of the House of Delegates being referred to the reference committees of the House in accordance with the By-Laws of the American Medical Association.

Resolution on American Medical Association Contribution to Health Education Projects

Dr. T. K. Gruber, for the Michigan delegation, presented the following resolutions, which were referred to the Reference Committee on Medical Education

Whereas, The Michigan State Medical Society has supported a program of health education during the past five years, and

Whereas, Such health education is not purely of local but also of national interest and value, therefore be it

Resolved, That the delegates of the Michigan State Medical Society to the American Medical Association be instructed to initiate a study of a policy by which the American Medical Association could contribute a portion of the cost of such a program of health education carried on by any state medical society

Resolutions on Establishment of General Practice Sections in Approved Hospitals

Dr T K Gruber, for the Michigan delegation, presented the following resolutions, which were referred to the Reference Committee on Medical Education

Whereas, The House of Delegates of the American Medical Association has established an individual section on the general practice of medicine, and

Whereas, The general practitioner has been recognized as a separate branch in the medical profession, and

Whereas, This group has shown its interest in this section by registering 939 members in the section at the 1946 American Medical Association meeting in San Francisco, and

Whereas, Their scientific section meetings were well attended, and

Whereas, The House of Delegates has already voiced its approval of such sections in the separate state and county societies that are component parts of the American Medical Association, and

Whereas, Sections on general practice have been started in some recognized hospitals that are approved by the American College of Surgeons and the Council on Medical Education and Hospitals and have been accepted by those bodies, and

Whereas, Many hospitals have not established general practice sections in their visiting active staffs and their governing heads are doubtful whether such action has the approval of the bodies which set up the rules and regulations for the approval of their hospitals for interns and residents, therefore be it

Resolved, That the delegates of the Michigan State Medical Society in convention assembled voice their approval of the establishment of sections of general practice in approved hospitals and that the delegates from Michigan to the American Medical Association House of Delegates introduce a similar resolution at the next meeting, requesting approval of that body and be it further

Resolved, That a copy of this resolution be sent to the Hospital Committee of the American College of Surgeons with a request that that body voice approval of such sections and include such in its manual of Hospital Regulations

Resolutions on Establishment of Certifying Board to Determine Qualification for General Practice

Dr. T K Gruber, Michigan, presented the following resolutions, which were referred to the Reference Committee on Medical Education

Resolved, That the Speaker of the House of Delegates appoint a committee consisting of five members to formulate and recommend a plan for the establishment of a certifying board to determine qualifications for general practice, and be it further

Resolved, That the committee be requested to report at the next meeting of the House of Delegates in June at Atlantic City

Resolution on Intern and Resident Medical Training

Dr A S Giordano, Indiana, presented the following resolution, which was referred to the Reference Committee on Medical Education

Whereas, The primary objective of intern and resident medical training is medical education, and

Whereas, The acceptability of internships and residencies in hospitals should be founded on the excellence of their teaching programs, and

Whereas, The number of hospitals approved for intern and resident training exceeds the number of available interns and residents, and

Whereas, Such disparity has forced hospitals to compete for applicants for training on monetary rather than on educational opportunities, therefore be it

Resolved, That a reasonable and uniform maximum figure for the remuneration of interns and residents be established, so that the monetary value of internships and residencies may not act as a deciding factor in the applicants for such training

Resolutions on Evidence of Practice of Medicine

Dr. Henry S. Ruth, Section on Anesthesiology, presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business

Whereas, The accepted method of notification of the amount of recompense indicated for medical service rendered consists in presentation to the patient or responsible party of a statement or bill for the same; and

Whereas, The amount involved has been established over a long period on an individual basis between the physician and the patient, and

Whereas, The fee rendered is usually based on the duration of service in time and effort, responsibility involved, material expenditures, the financial status of the patient and the qualifications of the physician, and

Whereas The practice of anesthesiology as well as other specialties has been defined by the American Medical Association as the "practice of medicine", therefore, be it

Resolved That the presentation of bills and the collection of private fees for medical service rendered by other than recognized physicians be hereby established as evidence of the practice of medicine, and be it further

Resolved, That persons sending such bills shall be liable to the penalties set forth in the medical practice acts and/or laws pertaining to medical education regulating the practice of medicine

Resolution on Morton Centenary

Dr Henry S. Ruth, Section on Anesthesiology, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business

Whereas, The year 1946 marks the one hundredth anniversary of the first public demonstration of the use of ether as an anesthetic agent by W T G Morton on Oct 16, 1846 in the Massachusetts General Hospital in Boston, and

Whereas, This event represents one of the most important steps in medical history, therefore be it

Resolved That the American Medical Association cooperate with the American Society of Anesthesiologists and other acceptable medical organizations in programs celebrating this centenary

Resolution on Bituminous Coal Mine Wage Agreement

Dr Clark Bailey, Kentucky, presented the following resolution, which was referred to the Reference Committee on Executive Session

Whereas, As a result of a resolution presented at the last session of the House of Delegates of the American Medical Association in regard to the problems of medical practice in the coal mining areas brought about by the bituminous coal mine wage agreement the Council on Medical Service was directed to cooperate with the mine physicians in these areas, and

Whereas, The physicians in the coal mining areas have been greatly benefited by the advice and interest of the members of the Council on Medical Service with the cooperation of the Council on Industrial Health, and

Whereas, There has been established an active relationship between coal mine physicians and these Councils of the American Medical Association, and

Whereas, As a recent grave crisis of a national character emphasizes the need for the continuance of the close relationships with the mine physicians, and

Whereas, The results of the survey stipulated in the wage agreement, of health, housing and sanitary conditions in the mine areas, will demand constructive medical leadership, therefore be it

Resolved That the Council on Medical Service and the Council on Industrial Health be directed to continue close cooperation with the mine physicians in an effort to maintain and improve the high standards of medical practice

Resolution on Teaching of Preventive Medicine and Public Health

Dr William D Stovall, Wisconsin, presented the following resolution, which was referred to the Reference Committee on Medical Education

Whereas, The professional literature is emphasizing preventive medicine as the advance of modern medicine,

Whereas, Groups concerned with administrative practices applicable to the control and prevention of disease are anxious that preventive medicine receive special recognition in the medical school curriculum,

Whereas, The technical methods for practice of preventive medicine and those for the practice of general medicine are not sharply differentiated in medical teaching,

Whereas, The concepts of preventive medicine arise from technical practices for disease control by prophylactic immunization, by the diagnosis and adequate treatment of incipient disease and functional disorders, and by environmental control,

Whereas, The introduction of additional subjects and more teaching hours into an already crowded medical curriculum is difficult, Whereas, The American Medical Association over the years has been active in advancing medical education to meet the progress of medical science and setting the standards for medical education in this country; therefore be it

Resolved, That the Council on Medical Education and Hospitals of the American Medical Association be requested to restudy the teaching of preventive medicine and public health to undergraduate medical students to determine the methods used in various medical schools in this country and Canada to determine the subject matter covered in such teaching.

Distribution of "Rich Report"

Copies of the "Rich Report" and the report of the special committee to study it were distributed by roll call.

The House recessed at 1:20 p. m. to reconvene Tuesday morning at 9:30.

Second Meeting—Tuesday Morning, December 10

The House of Delegates was called to order at 9:40 a. m. by the Speaker, Dr. R. W. Fouts.

Roll Call

On motion duly made, seconded and carried, the House directed that the report of the Reference Committee on Credentials for this day constitute the roll call.

Presentation of Minutes

It was moved by Dr. William Weston, Section on Pediatrics, seconded by Dr. Thomas S. Cullen, Maryland, and carried, that the House dispense with the reading of the minutes.

Report of Reference Committee on Credentials

Dr. G. Henry Mundt, chairman, announced that 167 delegates had been registered, and the speaker stated that a quorum was present and the House was ready to proceed with business.

Reconsideration of Third Recommendation in Report of Special Committee to Study the "Rich Report"

The Speaker announced that two distinguished visitors were present, one of whom wished his address given in executive session and would have to be heard at 10:30 a. m.

On motion by Dr. John W. Cline, California, seconded by Dr. William Weston, Section on Pediatrics, and carried, the recommendation adopted yesterday, reading "That it be considered by this House at that time in Executive Session limited to members of the House of Delegates and officers of the Association, acting as a Committee of the Whole" was rescinded.

Dr. John W. Cline, California, moved that the House reconsider the motion to make consideration of the Rich Report the first order of business this morning. The motion was seconded by Dr. Harry Aranow, New York, and carried.

Address of Dr. T. C. Routley

The Speaker introduced Dr. T. C. Routley, Secretary of the Canadian Medical Association, who addressed the House as follows:

Mr. Speaker, Ladies and Gentlemen:

For twenty-four years you have received me most cordially, and I regret exceedingly that circumstances did not make it possible for me to be with you at your San Francisco session. I would like to take one moment, if I may, and tell you, as the Chairman has instructed, why I missed your San Francisco session.

The government of Canada, as one of the invited nations to the United Nations International Congress on Health, invited the General Secretary of the Canadian Medical Association to act as one of its medical advisers. So for a period of five months I enjoyed the hospitality of New York. I didn't enjoy its humidity quite so much. But during that period I saw the formation of the World Health Organization as a structure set up by the United Nations. On completion of the structure, the government of Canada invited me to act as their representative on the Interim Commission, the body which has been charged with the responsibility of bringing the World Health Organization into being.

In the month of September the British Medical Association and the old Association Professionelle Internationale des Médicins which was organized in France decided there should be a conference on the medical profession of the world, and it was held in London. Again it was my privilege to be there.

Mr. Speaker, I am greatly privileged to have the opportunity to say to this governing body of the greatest medical association in the world that in my humble opinion two parallel streams have begun to flow, and I think their course might have some effect on the future of this world.

I believe that the World Health Organization set up by the United Nations offers an opportunity for the expression of good will and cooperation and world fellowship such as no other agency in the United Nations can do. But I submit to you, Mr. Speaker, that the World Health Organization without the vitalizing force of the medical profession of the world will be like an electric power line without electricity flowing through it.

I believe that we of the medical profession of the world have an opportunity because of our common belief in an ideal, because of our common objectives and because of our great belief in the ethics of our profession—we have an opportunity as a worldwide brotherhood—to demonstrate two things; first, that we can carry on as one world and second, that we believe in the brotherhood of man.

What would you think if the state of New York had only two physicians? Yet I have just come back from Geneva and heard Ethiopia and Liberia pointing out that with 12,600,000 population, they had two physicians between them. That is all. And I listened to the man from Czechoslovakia stating that the enemy liquidated—they never knew how—nearly 1,500 of their physicians.

I submit to you that today many parts of this world are suffering more than they ever did before. I submit to you gentlemen, that the medical profession has an opportunity not only to see that all mankind enjoys the highest possible level of health, but to demonstrate to a troubled world that man's humanity to man can transcend economic difficulties and that we can make this world safe for humanity.

I suggest to you that unless we go forward as one world we are going to go backward, and into utter chaos, as a divided world.

This great American Medical Association was quick to seize the opportunity of joining the World Medical Association. And may I speak, on behalf of the great American medical profession, appreciation of your hearty allegiance to and support of the efforts being put forward by this World Medical Association to make our profession what we think it can be all over the world. There is no desire, none whatever, to have the World Medical Association intrude itself into the private affairs of any nation. But, I think you will see quickly that there is an opportunity for physicians all over the world to assist one another.

Report of Reference Committee on Miscellaneous Business

1. Resolution on Morton Centenary: The Reference Committee on Miscellaneous Business recommends approval of this resolution as submitted yesterday.

2. Report of Committee on Military Rank: The Reference Committee recommends the continuation of the Committee on Military Rank and its activities as requested in the report of that Committee.

3. Resolutions on Evidence of Practice of Medicine: The reference committee offers the following substitute resolutions in place of those introduced on yesterday:

Whereas, The accepted method of notification of the amount of recompense indicated for medical service rendered consists in presentation to the patient or responsible party of a statement or bill for service rendered by the person rendering such service; and

Whereas, The amount involved has been established over a long period on an individual basis between the physician and the patient; and

Whereas, The fee rendered is usually based on the duration of service in time and effort, responsibility involved, material expenditures, the financial status of the patient and the qualifications of the physician; and

Whereas, The practice of anesthesiology has been defined by the American Medical Association as "the practice of medicine"; therefore be it

Resolved, That the House of Delegates of the American Medical Association reiterate its position that the administration of anesthesia constitutes the practice of medicine and the presentation of bills and the collection of private fees for such service rendered by others than recognized practitioners of medicine shall be considered as the evidence of practice of medicine; and be it further

Resolved, That these resolutions be sent to the agencies of each state having jurisdiction for the enforcement of medical practice acts and also to the secretary of the state medical association of each state.

Respectfully submitted,

William A. Coventry.
R. B. Anderson.
George A. Woodhouse.
Warren L. Allee.
William F. Costello.

The first and second sections of the report of the reference committee were adopted on motions of Dr. Coventry, duly seconded and carried.

Dr. Coventry moved adoption of the third section of the report of the reference committee dealing with the Resolutions on Evidence of Practice of Medicine, and the motion was seconded by Dr. Robert E. Schlueter, Missouri. After discussion by several, it was moved by Dr. Walter E. Vest, West Virginia, and seconded by Dr. George W. Kosmak, New York, that this portion of the report be referred again to the reference committee for further consideration and report tomorrow. The motion was lost in a standing vote.

Dr. Thomas M. D'Angelo, New York, moved to amend the resolution of the reference committee by adding "This in no way applies to nurse anesthetists in hospitals under the jurisdiction of a properly qualified anesthesiologist," and the motion was seconded by Dr. J. Stanley Kenney, New York. After discussion by several, Dr. E. V. Askey, California, suggested that the proposed amendment be changed to read "This in no way applies to nurse anesthetists in hospitals under the direction, jurisdiction and responsibility of a regularly licensed doctor of medicine," and the suggestion was accepted by Dr. D'Angelo.

Dr. Coventry's motion to adopt the third section of the report of the reference committee was then adopted as amended.

On motion of Dr. Coventry, seconded by Dr. George W. Kosmak, New York, and carried, the report of the Reference Committee on Miscellaneous Business as amended was adopted as a whole.

Report of Reference Committee on Emergency Medical Service

Dr. Walter G. Phippen, Chairman, presented the following report, which was adopted on motion of Dr. Phippen, seconded by Dr. George W. Kosmak, New York, and carried:

Your reference committee has read the report of the Committee on National Emergency Medical Service, and commends the committee for its diligence and comprehension of the scope of its work.

It believes the change in title to "Committee on National Emergency Medical Service" is well taken.

The questionnaire sent to fifty thousand former medical officers seems very complete and comprehensive, and its final tabulation will be looked forward to with great interest.

The committee agrees that "The selection of men to be Surgeon Generals should be made from those available men who are eminently qualified by experience and broad professional contacts and who possess the confidence of the medical profession of the nation on whom they must depend for support."

We believe that more consideration must be given to the care of the civilian population in any future national emergency because of the change in the type of offensive and defensive warfare.

We would suggest that the committee amplify its field of study by sending questionnaires to an appropriate number of those physicians who maintained civilian practice during the trying war period.

The committee is again commended for its excellent report of progress.

Respectfully submitted,

Walter G. Phippen, Chairman.
C. B. Conklin.
Stephen E. Gavin.
George Braunlich.
Grover C. Penberthy.
Arden Freer.
John Harper.

Executive Session

On motion of Dr. John W. Cline, California, seconded by Dr. Walter E. Vest, West Virginia, and carried after amendment, the House went into Executive Session granting permission to attend, in addition to the delegates, to officers of constituent state or component county medical societies, executive secretaries, any members of the American Medical Association present, editors of state medical journals and directors of councils and bureaus of the American Medical Association.

The House then recessed to go into Executive Session at 10:30 a. m.

Address of Rear Admiral J. T. Boone (MC), United States Navy

The Sergeants at Arms polled the House and announced that all present were entitled to be there.

Dr. George F. Lull, Secretary, introduced Rear Admiral J. T. Boone (MC), U. S. Navy, Medical Advisor for the Coal Mines Administrator, who presented the following address:

Dr. Fouts, General Lull, Ladies and Gentlemen:

Before I start my address, I regret very much that it is necessary to read it, since I would much prefer to talk it; but, as I shall explain, there are very definite reasons why I at this moment have to be extremely careful. This is not, in any sense, the report of the medical survey or a part of it. I think what I have to say will speak for itself and for the reason that I have to approach the subject as I am this morning.

When the gracious and courteous invitation to address the House of Delegates was received by me, it could not be foreseen that a second labor strike in a single year would occur in the bituminous coal industry, nor was it possible to anticipate the unfortunate circumstances of court action necessitated by the unilateral denunciation by the president of the United Mine Workers of America of the contract executed between himself and the Government. Under these conditions, my appearance before you at this particular time unfortunately presents a definite handicap in a presentation that I had hoped to be able to make. I had looked forward pleasantly to this meeting. I full well realize that you, Mr. Speaker, honored me distinctively when you extended the invitation for me to address the House of Delegates. I wish that I could feel worthy of the honor bestowed. It would have been a happy occasion could we have sat down together, as it were, and discussed, fully and frankly, observations that it has been my privilege to make of the medical care, hospitalization, sanitation, housing and community life of the great industry of coal. The change in the national picture, however, creates a cause for embarrassment. To put it in more common vernacular, I feel that I am very much on the spot. However, in coming before you I recognize that I, as a physician, have a service to render to my profession as well as a public duty to perform as an officer of the Government. I shall ask your indulgence and charitableness in my efforts to present certain problems in which I believe the profession of medicine is vitally concerned.

I might begin by identifying my personal background of interest in medicine so that there may be no illusions that, despite any critical remarks, I have anything but a reverence for my profession and, therefore, am zealous to safeguard its welfare. The seeds of my vocation were implanted in the earliest recollections of my youth. Never had I wished to be anything but a Doctor of Medicine, and at the termination of my career, regardless of all the tributes that might be accumulated by me in a life time, I hope to be remembered as just a Doctor of Medicine. Many hours of my youth were spent with an uncle of mine who was a physician and for whom I had and still have a deep affection. He inspired me in those horse and buggy days as I rode with him over the countryside while he went from house to house to care for his patients. The concept of "the family physician" always has been an ideal of mine.

I cannot but regret that the practice of medicine has wandered, drifted or been forced far afield from this concept which is based on the personal relationship of patient and physician. We are witnessing and are a part of great changes in our individual and community lives and in our relationships with one another. The rapid progress of science, technology and industry compels social change. The resulting complexities of life have conspired to force on us high degrees of specialization, in medicine as well as in other fields. Discomforting as such thoughts may be, it is wise as well as necessary that medicine be attuned to the cadence of the times.

We can justly be proud that medicine can so speedily and admirably adjust itself to new conditions. No better example can be afforded than the way it responded to the emergencies of the war. The war brought with it tremendous acceleration in medical practices due to the scientific advances and the new discoveries made in drug therapy, new surgical procedures and emergency measures applied on the field of battle. For the first time in history, a war had been fought (and this, as we know, was one that involved more people than any other) in which the incidence of disease in the armed forces was less than battle casualties. To medicine must belong the credit for this accomplishment and, I might add, to preventive medicine belongs the greatest credit. No less a leader than Admiral Halsey has told me in person that until we had conquered the mosquito and the fly in the South Pacific the combat forces were held at bay in that theater of operation. Owing to immunization, we had no tetanus to speak of in this war, and no one died of epidemic typhus. We had safe water to drink and noncontaminated foods to eat. We lived in tropical climes heavily disease-laden, foreign to our troops and sea forces, and yet, in spite of sundry debilitating and invaliding factors, our military forces fought successfully a war to victory with a minimum of handicap from disease.

The war brought about many changes. It brought with it new discoveries in chemotherapy, gave impetus to advanced surgical procedures and furthered public confidence in the profession of medicine. The war compelled us, however, temporarily to intensify and accelerate medical education. Further, more than sixty thousand physicians in the United States were swept out of their offices, from their home firesides and transformed, as it were, overnight into military entities. The civilian attire was suddenly replaced by the military uniforms of the nation. Physicians who had retired from private practice, relinquished their leisure and their hobbies to resume the active practice of medicine in a highly commendable effort to meet the needs of their communities. Then when the war ended and the period of too rapid demobilization set in, physicians again faced a tremendous problem of readjustment.

The war years also were accompanied by changes and dangers of a legislative nature. A welter of new laws, bills and regulations bearing directly on public health and medical and hospital care confronted the medical profession. I am in no position, as an officer of the United States Navy, to express any personal preferences, alternatives or aversions. But I also need not be a mystic to discern that some of the proposals that have been vigorously propounded meet with disfavor and considerable apprehension by large numbers of medical practitioners. It is important only to note and reemphasize that such proposals as have engendered a substantial degree of public support stem from the real, as well as imagined, needs of the people. They are symptoms of dissatisfaction with the medical profession as it practices its art today; and the physicians themselves should be the first to recognize these symptoms, diagnose the causes and prescribe remedies which will not merely allay the complaints but produce the cure.

These controversial issues will doubtless rise again in the new Congress. It is likely that organized medicine will again find itself in the embarrassing position of the Good Samaritan trying to explain his deeds. However, organized medicine must also be prepared to present unselfishly some rational solutions to the problems of rising costs of medical care; more equitable distribution of services and facilities; more rapid transfer of the benefits of laboratory and clinical research to the patient; greater spread of diagnostic aid; wider application of the technology of public health, industrial medicine and preventive medicine, and other health matters of public concern.

None of us should fear the pounding out on the anvil of public opinion of the great issues of the day. Those of us alined with medicine must expect that the problems affecting medical practice will be laid on that anvil. We must not fear it but be prepared to play a leading part in its forging. Organized medicine must, however, see to it that the debate is tempered by the record of past successful accomplishment and by logical reasoning, not hysteria and emotionalism. In other words the profession of medicine must be the guiding and stabilizing force; it must apply the art of treatment and, if possible, in order to avoid an emotional national imbalance, it must meet the issues of the day with the tolerant artistry of the physician. If medicine does not exhibit the leadership in the correction of abuses and the overcoming of its own deficiencies and demonstrate its willingness to improve, other forces less experienced and less competent will undertake the leadership. Organized medicine has a tremendous challenge to meet. If it does not maintain directional control, other forces outside of it are not only willing but are anxious to mold the destiny of the profession.

The survey of medical care, hospital and medical facilities and sanitary conditions in the coal mining areas of the nation, which I have been privileged to organize and direct, has called my attention to other issues facing the medical profession which, if narrower in scope than those I have already mentioned, are nonetheless of vital importance to a proficient and free medicine. For the benefit of those who have not had the opportunity of reading my paper which was published in the November 30 issue of THE JOURNAL of The American Medical Association, I should like to describe briefly the origin and scope of the coal industry survey which was initiated some six months ago and is now drawing to a close.

As you remember, the soft coal mines were closed down by a strike throughout April and most of May of the present year. When operations were resumed, the mines were under government control by order of the President of the United States, and their operation was vested in the Department of the Interior. The Secretary of the Interior, the Honorable J. A. Krug, called on Admiral Ben Moreell* of the Civil Engineer Corps, United States Navy, who had made a notable record in handling a similar situation in the oil industry last year, to become Federal Coal Mines Administrator. A week after Government seizure, Secretary Krug, with the assistance of Admiral Moreell, negotiated a contract with the miners' union which became effective May 29. Various provisions of this contract deal with health matters, among which is section five, which reads as follows:

> The Coal Mines Administrator undertakes to have made a comprehensive survey and study of the hospital and medical facilities, medical treatment, sanitary and housing conditions in the coal mining areas. The purpose of this survey will be to determine the character and scope of improvements which should be made to provide the mine workers of the Nation with medical, housing and sanitary facilities conforming to recognized American standards.

The Secretary of the Interior, with the approval of the President of the United States, selected me to serve as the Director of the Medical Survey. Commodore Charles T. Dickeman, Civil Engineer Corps, United States Navy, was selected and assigned as my principal assistant and engineering advisor. Medical, engineering and welfare and recreation officers of the Navy were assigned for the purpose of composing field surveying teams, five of which were organized and assigned to investigate selected mining communities in twenty-two of the twenty-six principal soft-coal mining states of the nation. These teams worked out of the five regional area offices of the Federal Coal Mines Administration with headquarters located in Pittsburgh; Ashland, Ky.; Chicago; Kansas City, Mo., and Denver, Colo.

I have been aware that wonderment has prevailed in some quarters as to why a *Naval* Medical Officer was directed to make such a survey. Neither I nor my Naval medical associates are officers of the United States Public Health Service, but public health is not an unfamiliar subject to the Naval Medical Corps. Throughout the history of that Corps, it has made repeated investigations and taken corrective action on large scale public health matters in various parts of the world. Frequently, it has had to make foreign territory habitable for the armed forces of our country so that they might occupy and carry out their military obligations in varied climes and under varied conditions. The Navy serves from the Arctic to the Antarctic; in temperate, frigid and tropic zones. I might add, gentlemen, that the Naval Medical Corps also must pioneer many times to make it possible for our military personnel to work at great altitudes in the rarefied atmosphere, at great depths under the sea and in confined and crowded spaces in the ships on the surface of the sea. We of the Navy serve in shipyards which are great industrial plants. We, therefore, were enabled to approach our problem in the study to which I have referred not as the uninitiated in industrial health and in preventive or public health matters.

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* When Admiral Moreell desired to retire from active duty in the Navy, he resigned as Federal Coal Mines Administrator and was succeeded by his Deputy, Captain Norman H. Collisson, United States Naval Reserve.

In organizing and conducting the survey the keynote was impartiality and objectivity. We approached the study without preconceived attitudes and without bias and have always maintained what we believe to have been strict impartiality. We were determined to obtain *facts* and to predicate conclusions solely on the basis of reliable information. In contradistinction to some other surveys, we were fortunate in that we could rely, in cases where statistical evidence was not obtainable, on professional people capable of making judicious appraisals. Further, we obtained excellent cooperation from management and labor, from state and community officials and from physicians on the valid promise that health is a common meeting ground for all who have a relationship with or are interested in the people in the great coal mining industry.

The allegation that there are subhealth standards in the bituminous coal industry prompted the Government to commit itself to making this survey. To medical practitioners it is obvious that there are subhealth standards in other industries also. However, our group had been ordered to give its attention only to the coal industry. Our investigation carried us personally into mine workings, physicians' offices, dispensaries, hospitals and schools and into the homes of miners in the states of Pennsylvania, West Virginia, Maryland, Kentucky, Virginia, Tennessee, Alabama, Ohio, Michigan, Indiana, Illinois, Iowa, Kansas, Missouri, Arkansas, Oklahoma, Colorado, Wyoming, Montana, New Mexico, Utah and Washington. It cannot be said that those of you physicians not practicing or living in the areas where coal is mined have no interest in the miner and his dependents. I am sure you are too broadminded to have any such concept. The health problem in the coal fields cannot be dismissed as a matter affecting less than 2 per cent of the population of the country or merely a few hundred physicians. What we have seen I can assure you is rightly a concern of the specialist in Chicago and New York as well as the general practitioner in the isolated Appalachian regions. As you well know, since diseases can become epidemics, diseases originating in rural and mining communities can be and frequently are spread to urban centers, to even those far removed from coal mining areas. The poor sanitation and apparent stream pollution in mining communities are matters of more than local concern. It is obvious to you gentlemen that illness and disease in one segment of the population can readily affect the health and welfare of the entire nation. I am sure, therefore, that you agree with me when I say that if we can help to raise the health standards of coal mining communities, we can contribute to improvement of the national well-being.

As the report of our findings still remains to be completed, it obviously would be premature and improper to reveal at this time our results and conclusions. However, to my associates in the practice of medicine, I feel it is not amiss to present some of my personal observations and impressions and to call to the attention of this most representative group some of the problems which seem to be a concern of organized medicine.

The apparent weaknesses in public health programs in the nation's coal mining regions are deeply disturbing. Elementary control measures, in many instances, are completely lacking. There are exceptions, of course, but I would guess that, as a general rule, coal-mining communities, particularly in the more densely populated and more heavily productive coal areas, are deficient in such essential measures as adequate water supply controls, proper disposal of sewage and garbage, reasonable safeguards against contamination from human and animal wastes, protection in food and milk handling and insect and rodent control measures. Although a number of coal-mining communities owned and operated by the larger and more progressive coal companies seem to be as sanitary and healthful as our better incorporated cities, they are too few in number and stand out as exceptions to the rule.

State departments of health and similar state agencies are, in most instances, aware of the problems, and some are making a strenuous effort to overcome them, but in a majority of cases, unfortunately, their efforts do not extend to coal communities. They are, however, severely handicapped. They are faced with shortcomings in their laws and with inadequacies in the powers of enforcement, particularly when many of these mining communities are privately owned property and not public or even semipublic properties. State health departments have not had, and do not now have, even with the federal financial assistance that has been given them in recent years, sufficient funds to carry out any but the most minimal programs. They are further seriously handicapped at the present time by inability to recruit trained personnel because of a definite shortage of professional people, and because of the relatively small salaries they are authorized to pay. On the county and local levels public health work is even more sporadic. A few of the coal counties have outstanding programs which are carried out by organized and trained staffs on a full time basis; other counties have no individual programs whatsoever or haphazard programs directed and carried out by part time personnel.

In the coal communities that I have visited, I have inquired into the participation in public health work by the "company" physician and other private practitioners and, I must say, I have been very disappointed to learn that, except for school health programs of immunization, physicians have evidenced very little interest in public health work and preventive medicine. These same physicians, as residents of the communities in which they practice, have not even as a rule undertaken their responsibilities as enlightened citizens and, shutting their eyes to the apparent stream pollution and closing their ears to the crying need for hygiene education of their fellow citizens, have withdrawn themselves into their work and their private lives. I full well realize the difficulties they face. They are extremely busy with the practice of curative medicine, their patient load probably being as high as that of any physician in the United States. They hesitate to assume a leadership in matters where there is little general understanding or willingness to understand. Nevertheless, their reluctance to show their concern and to participate beyond the confines of their own private practice is indicative of an attitude which is altogether too general.

I may be in error, but I cannot help having the feeling that there is a definite schism between curative medicine and preventive medicine. I am disturbed by the hiatus that exists between private practitioners and public health officials. All are men of medicine or closely related thereto. The common objective of private practitioners and the public health officials is the maintenance of the health of the people of the nation. Public health work in the coal-producing states and counties has broken down or rather, I should say, has never fully gotten under way because of an unfortunate lack of public understanding and public support. I believe that organized medicine can perform a noble task in closing the gap between curative medicine and preventive medicine and in assuming a greater degree of leadership in educating its own membership and the general public in the values of public health work; also it should stimulate and encourage the public to provide a greater measure of support for preventive health measures. I feel that every effort should be exerted to see that states and counties and other local jurisdictions have adequate legislation, reasonable enforcement authority and rounded out staffs of full time, not part time, health officers, sanitarians, visiting nurses and other trained personnel. Public health is not exclusively the concern of government.

Medical practice in coal mining communities throughout the United States has a traditional background. Various prepayment plans are in existence almost generally. The histories show that their origins are rooted in necessity. Coal-mining operations in many parts of the country began in isolated areas before the establishment of other communities or even ordinary means of public transportation. To attract physicians to these communities, it was necessary to guarantee them an income. This was done by "checking off" from the miners' wages a specified sum each pay day to provide for medical care. The coal company recruited the physician and provided him with office space. In some instances, the company paid him a salary of more or less money than the "check off" provided. In other instances, the entire sum of money obtained from the "check off" constituted the physician's guarantee.

Today, physicians who carry on their practices in coal-mining communities perform their duties under a variety of payment systems. In some cases, the physician is paid a straight salary by the company and limits his practice for the company to cases which are "compensable" under state laws. In other instances the doctor receives his principal fee under the "check off" system and, in addition to his general practice, handles accident cases for the company on a fee for service basis. The prepayment plans which are in existence today do not provide for complete coverage of the subscribers' ailments. The physician, under the prevailing systems, generally charges extra on a fee for service basis for maternity cases and for treatment of venereal diseases. He also generally charges extra for home calls to persons living outside the camp area, even though they are subscribers to the prepayment plan. In addition it is general for these "contract" or "list" physicians to practice on a fee for service basis among residents of the community who are not subscribers to the prepayment plan. There are many modifications of these systems, which the medical officers of our Survey Group have investigated and which will be described in the survey report that is now in preparation.

The prepayment medical care and hospitalization plans which are in existence in coal-mining communities can be very carefully scrutinized; and I am sure an overall study would be revealing and provocative. I feel it is a part of the obligations of organized medicine to know, if it does not know already, some of the situations which exist today. I cannot help but feel, as one who has visited and inspected many hospitals as part of my official duties, the tremendous variations in adequacy, appearance, safety and maintenance of hospitals. Unfortunately, too few states have adequate laws to license hospitals. If this were not so, I believe that the standards of the hospitals would be very much higher. It may be that the Hospital Survey and Construction Act will play an important part not only in providing more hospitals but in raising the qualities of the old as well as new hospitals, The Act should establish better standards which take cognizance of the requirements set by the medical profession.

I have, in previous discussions and in my talk before the Seventh Annual Congress on Industrial Health on October 1 in Boston, spoken of the lack of interest on the part of the practitioner in coal-mining communities in industrial health. While I do firmly believe that no physician can practice medicine effectively without a good understanding of the environmental conditions of his patients, I realize nevertheless that industrial medicine is a specialized branch of the medical arts. One should not, therefore, expect the physician in the coal-mining community who is engaged primarily in general practice to be thoroughly conversant with all the phases of industrial medicine as it applies to coal mining. This had better be left to the medical practitioner who is engaged specifically in the prevention and treatment of occupational illnesses and also sees the victim of industrial accidents prior to referral for definitive surgical care. Because the mine physician, as we know him today, is generally not familiar with the working environment of the miner and is not a specialist in industrial medicine, the preemployment examinations which he conducts in some instances at the request of the management have little value from the standpoint of proper placement of the job seeker. They are of benefit neither to the man whom he may be called on later to treat, nor to the employer who is concerned with the proper placement of persons; they are attached as primarily of use as a means of conclusion. As applied now they contribute little to preventive medicine, but they can be potent and constructive factors. It may be hoped, however, that, with the end of the war and the better possibility of recruiting additional physicians into the mine areas to alleviate the burdens of the present practitioners, mine physicians will have more time and will, through their own initiative and through their organization, take a greater interest in the environmental conditions of the miners in order to improve medical practice in the mining communities.

The luxury of criticism is one in which we all love to indulge. The coal-mining physician has had his share of criticism. The mere fact that medical practice in some coal-mining communities can be a lucrative business does not mean that the profession as a whole is interested primarily in making money. There are a number of men in the coal-mining communities who could do as well or better elsewhere, yet remain in these communities out of a spirit of service to the people and devotion to their profession. I will confess that the instances in which I have observed this are more rare than I would like to see, but they are, nevertheless, comforting to me and I am sure to all of us who love the medical profession. It is inspiring to a medical practitioner to relearn occasionally that the missionary spirit still exists in the profession.

Unfortunately, missionary zeal does not always go hand in hand with competence and progress. That is one of the penalties of conducting a medical practice in a relatively isolated area. Because of the assured income that results from the prepayment system which is common and traditional in the coal-mining industry, many young men who need a start in their profession have a unique opportunity to begin their careers in those areas. Where advantage is taken of such opportunities by young men who are starting out in practice, the benefits accruing therefrom are mutual. The physician is enabled to begin his practice on a solid foundation and pay off the debts which he has acquired for his medical education; the community at the same time will benefit from the vitality, energy and fresh knowledge of the young practitioner.

The advantages of such circumstances, however, can easily be inverted to become detrimental. If the young practitioner remains too long in isolation, hesitating to give up a relatively assured income—and he is entitled to security like any one else—he gradually and inevitably falls into a rut. It becomes more and more difficult for him, particularly when the demands of his patients consume so much of his time, to maintain and establish contacts with other members of his profession and to keep up, by reading and attending meetings, with the newer developments in medicine or to obtain more of the broad experience available in the larger areas or metropolitan centers. It takes a man with an unusual amount of willpower, determination and ambition to ward off the constrictions that are imposed on him by his isolation and the nature of the work he is doing.

To the physicians who practice in the coal mining communities, certain provisions in the Krug and Lewis Agreement have been highly disturbing. These are the provisions under section 4 dealing with a "health and welfare program." Under this program, two funds are to be set up, one of which is "a medical and hospital fund." I want to add at this point that the survey which we are conducting has only an indirect relationship to these funds.

There has been a lot of confusion about those funds, so I might take a moment to clarify it. You have heard that, under the Krug and Lewis Agreement, the first is Fund A in which the money comes from the 5¢ a ton royalty from coal. That is to go for retirement benefits and welfare, which have certain limitations defined, and yet to my mind need further definitions. The trusteeship for the control of that money accruing from the 5¢ a ton is composed of one trustee appointed from the government, one from the United Mine Workers of America and two elected members.

The other medical fund is for medical care and hospitalization. The money comes from the pay envelop deductions voluntarily, from the miner. That fund is to be administered by a trusteeship set up by the United Mine Workers of America. At the present time, the check-off money is collected by the operators and paid to physicians or hospitals in the various systems.

Then there is meant to be a correlation or implementation of the two funds and that is, as any mind can see, where trouble may arise. I do not know exactly how they were worked out. I might say that the many millions of dollars that have accrued from Fund A already, from the 5¢ a ton deduction, has been held in escrow in the First National Bank in New York under the custodianship of the Paymaster General of the Navy.

The medical fund which is to be administered by trustees appointed by the President of the United Mine Workers of America is to be accumulated from wage deductions of mine workers and is to be used for medical, hospital and related purposes "at the discretion of the trustees of the fund." Collections for this fund have not yet started, but what changes in the present system of medical practice will follow its establishment, no one, except possibly a few persons inside the United Mine Workers of America organization, can foretell. Whether the trustees will eliminate the direct payment of the "check off" to physicians; whether the money collected from the workers will go into a common fund to be spent on a local, regional or national basis, or whether the trustees will attempt to obtain medical services on a salary basis or on a fee for service basis is unknown. The mine physicians, I understand, are not so much concerned about their economic security as they are in the maintenance of their professional status. That is the concern *of all medical men, because the establishment of this* particular medical fund may be the precedent for similar funds in other industries. What changes this new departure, which may inject third parties between physicians and patients, will tend to bring about in medical practice, no one knows; but it is evident that the American Medical Association has been handed a problem which it cannot and is not overlooking. The views which organized medicine takes in handling such problems will help to fashion the pattern that is eventually evolved. Organized medicine, as I have said, must dissipate any emotionalism that beclouds sound reasoning and must assume leadership in the formulation and establishment of reasonable and practical programs that will benefit the people.

The ideals of the medical profession are as strong today as they were about twenty-four centuries ago when they were promulgated by Hippocrates. It is a tribute to the men of the medical profession that, on the whole, there has been so little straying from the path which the profession has marked for itself. The road ahead, however, is marked by pitfalls and obstacles. We must assure ourselves first that these are real obstructions and then remove them efficaciously, so that we may continue to move forward and serve humanity, for what is in the best interests of the people is best for the profession of medicine.

Committee of the Whole

On motion of Dr. Edwin S. Hamilton, Illinois, seconded by several, the House resolved itself into a Committee of the Whole for the consideration of the report of the Special Committee on Executive Session for Consideration of the Rich Report, with Dr. Hamilton as chairman.

Executive Session—Tuesday Afternoon

The House reconvened in Executive Session at 3:30 p. m., with the Speaker, Dr. Roy W. Fouts, presiding.

Report of Committee of the Whole

On motion of Dr. Edwin S. Hamilton, Chairman, seconded by several and carried, the report of the Committee of the Whole, which recommended adoption of the following portions of the report of the Special Committee on Executive Session for Consideration of the Rich Report, was adopted:

In opening a detailed discussion of the many recommendations involved in this report, your committee wishes to dwell first on the conclusion reached by Mr. Rich—offered, not as a recommendation but rather as an accepted mechanism for the activities of the American Medical Association—as stated in the last paragraph on page 1 of his report, "To separate distinctly the functions of scientific interpretation, medical economics and social medicine, and the direction of public relations." While recognizing the advantage of creating such several agencies, whether as committees, bureaus or councils, yet because of the overlapping and intermingling of the interests and activities of these several departments and for the sake of clearcut, now confusing, public relations and for the proper preservation, at all times, of the well considered professional viewpoint, it would seem essential to designate one officer or one small committee or council with authority to act in the capacity of interdepartmental supervisorship.

I. Proceeding to a detailed consideration of specific recommendation, your committee approves of recommendations no. 1 and no. 2 on page 2 of the Rich Report, reading as follows:

> 1. We *Recommend*, therefore, that the Association seek every possible opportunity and means to describe and dramatize the progress of scientific medicine, what it promises to mean to mankind, and especially, all that the Association has done and is doing to advance this progress.
>
> 2. We *Recommend Further* that this vital assignment be entrusted to the Editor of The Journal who, in our judgment, is on all counts best equipped to present this story with a degree of authority and with a brilliance which will appeal to the general public.

The suggestion is made, however, that in addition to a presentation of the purely scientific accomplishments of the profession the story of the development of organized medicine in America be made known. The approaching Centennial of the American Medical Association affords an excellent opportunity for acquainting the public with our story. This might well be accomplished by a series of articles published in Hygeia and in other periodicals depicting, chronologically, the more dramatic and significant steps in the history of the development of organized medicine in America, such as is now appearing in The Journal of the American Medical Association. Beginning with the Medical Society of New Jersey, organized in 1766 for the purpose of improving the practice of medicine and inspired by a need for bettering the care of disabled veterans of the French and Indian War, and so all down the line, in the formation of city, county, state and national organizations, the motivating factors have been betterment in the quality of medicine and the welfare and protection of the public. These facts well speak for themselves without elaboration.

II. Your committee cannot agree fully with the preamble on page 3 of the Rich Report leading up to recommendations concerning Hygeia. During war years, the circulation of this periodical was largely determined by the amount of paper available. Its circulation could have been doubled at any time. Your committee is somewhat at a loss to understand the implications in the criticism of the commercial methods of promotion used. It is fully in accord with the proposition that Hygeia should be vitalized into the most powerful medium of approach to the reading public. It should not only carry pertinent scientific facts suitable for public consumption but should also aquaint the laity with the "Doctor Story" and present the profession's side of all controversial matters. This magazine would afford an excellent medium for the presentation of the history of the development of organized medicine alluded to in the foregoing section. With these thoughts in mind, we approve of recommendation no. 3 on page 3 of the Rich Report, reading:

> 3. We *Recommend*, therefore, that the editor be requested to devote particular attention to the urgent task of vitalizing *Hygeia*, and that he be authorized to obtain a fully competent managing editor with adequate editorial and art assistants.

This committee does not approve of recommendation no. 4 on page 3 of the Rich Report, which reads:

> 4. We *Recommend Further* that the editor-in-chief be requested, each year, to reserve exclusively for *Hygeia* an appropriate number of his most vivid and popular articles.

III. In common with Mr. Rich, your committee recognizes the fact that the average busy physician may be a poor business man and perhaps an irregular economist, but he has done and is doing a splendid job for the American people. One advantage which the practicing physician has over the trained economic theorist is a first hand knowledge of people of all classes and a sympathetic understanding of their needs, both medical and socioeconomic. Our Bureau of Medical Economics up to the present has confined itself to the study and analysis of every conceivable phase of medical economics. It should continue to be headed by the best trained man available. With this suggestion your committee approves recommendation no. 5 on page 4 of the Rich Report which reads as follows:

> 5. We *Recommend* that in order to obtain a truly superior person of the highest caliber, he be offered not only direction of the Bureau but also responsibility for procuring and developing the material for a Department of Medical Economics and Social Medicine in The Journal and in *Hygeia*.

IV. With regard to the section on "Diverse Opinion," we are fully in accord with the proposition that all responsible minority groups should be afforded the privilege of giving public expression of their views. However, every member has had experience in his own county or state organization with the crack pot chronic objector, the mouth piece of no group, who makes a persistent nuisance of himself. The Editor should be permitted the use of his discretion in denying publicity to such persons. Your committee feels that diverse economic opinions should be limited to The Journal of the American Medical Association and other journals for professional reading and not put in lay publications. With these exceptions, your committee approves of recommendation no. 6 on page 5 of the Rich Report, which reads:

> 6. We *Recommend*, therefore, that the economist appointed to the position mentioned shall give opportunity in his department of The Journal and of *Hygeia* for the expression of diverse viewpoints. This, we are convinced, will create a dynamic atmosphere which will go far to arouse the active interest of the many doctors whose lethargy has rightly been a matter of grave concern.

V. Your committee is fully in accord with the need of a more positive type of public relations program. It likewise recognizes the advantage of trained directorship in the development of such a program and it understands that a director has been appointed.

From past experience your committee knows that publicity experts, in their enthusiasm to attract the attention of the reading public, have been known to produce misleading headlines and tincture truth with fiction to the detriment of the dignity of the profession. With no intent to hamper this new officer, your committee nevertheless urges that all publicity and all projects promulgated by him be approved by the General Manager before published or undertaken. If this stipulation is made mandatory, your committee approves recommendations nos. 7 and 8, page 6 of the Rich Report which read:

> 7. We *Recommend*, therefore, that the General Manager be authorized to appoint an Executive Assistant in charge of coordinating and servicing the public relations activities of all officers, councils, bureaus, divisions and departments of the Association.
>
> 8. We *Recommend* further that this new appointee have the responsibility of developing, with the full support of the Board, ways and means of greatly broadening the system of interpretation of the Association to the public on matters other than scientific medicine.

Three Essential Goals. On pages 8 and 9 of the Rich Report, the subject of Three Essential Goals provides no points of difference. This committee is in agreement with the views expressed, which read as follows:

> Viewing the field of medical economics and social medicine from a public relations standpoint, there are three basic tasks—three essential goals, they might better be called. Each must be held constantly in mind by the Association.
>
> Find the Truth. The first of these goals is for the Association to convince the public that it is seeking the truth as honestly in the economic and social aspects of medicine as *it is in the scientific*. And it must recognize that in these fields, to which it is less accustomed, there is as yet no proven truth. To put it otherwise, truth here, as in medicine, must be found in the clinic. But here the clinic is the public. And in this clinic the patients are not prostrate—they are active, vigorous and articulate. And they have various views about what they want to have happen to them when they do become prostrate, as they know they will sooner or later.
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> Moreover it must constantly be remembered that patients in this clinic *control* the public relations of the American Medical Association. Neither the American Medical Association itself nor the wisest public relations counsel can control its public relations. But confident reliance may be placed in a most substantial, even remarkable, improvement in its public relations if the American Medical Association will give a fair hearing week in and week out, year in and year out, to those who with sincerity and intelligence are inclined to other viewpoints or who believe there are neglected developments and issues which need attention. Only by full discussion can the right answers be found.
>
> Put the People First. Study alone will not suffice. The second essential goal is to show the public that the American Medical Association is actually following up the truth which it finds by doing everything in its power to bring medical care to all the people. As one nationally known public relations practitioner put it, the American Medical Association must prove "that it is out fighting for medical care that the public can afford."
>
> This means that the Association must deal first and foremost with the needs of the public; second, with the welfare of the physician. In other words, its actions must be the organized embodiment of the first statement in the "Principles of Medical Ethics".
>
> > "A profession has for its prime object the service it can render to humanity; reward or financial gain should be a subordinate consideration. *The practice of medicine is a profession.* In choosing this profession an individual assumes an obligation to conduct himself in accordance with its ideals."
>
> Become Adequate: Finally the performance of the Association must be adequate. As one writer has recently said with reference to the National Health Program adopted Feb. 14, 1946, "The American Medical Association has submitted itself to the test of accomplishment."

National Physicians Committee for the Extension of Medical Service: This committee recognized: 1. That each member of the American Medical Association is primarily a citizen with the inalienable right to join any organization. 2. That the House of Delegates has on two previous occasions endorsed and commended the work of the National Physicians Committee for the Extension of Medical Service. 3. In line with the new program in the process of accomplishment, this committee feels that the American Medical Association should and must do its own public relations and legislative work. This implies no lack of appreciation of similar work done and to be done by other organizations devoted to the best interests of the public and of organized medicine. 4. In view of the controversial character of the Rich Report and in view of lack of documentary evidence relating to the National Physicians Committee for the Extension of Medical Service, this committee recommends further study of this portion of the report.

Lay Participation in Voluntary Plans. In many of the plans, there is lay participation. Few, if any, have total medical control and as long as we are providing medical service, control should be vested in the hands of the physicians. With that in view, this committee approves recommendation no. 10 on page 12 of the Rich Report, which reads:

> 10. We *Recommend*, therefore, that the relationship of lay participation to the successful development and operation of voluntary health insurance plans be the subject of objective study and that, unless there shall prove to be conclusive evidence to the contrary, the present requirements for total medical control be revised promptly.

In the Sherburne resolution, reference is made to the Council on Medical Service and Public Relations. Since these two functions are now divided, this recommendation should apply to the duties of the Executive Assistant to the General Manager.

Provided that the work of the Executive Assistant first meets with the approval of the General Manager, your committee approves of recommendation no. 11, page 15 of the Rich Report, which reads:

> 11. We *Recommend*, therefore, that the Secretary and General Manager be requested to implement as fully as possible the resolution on modern medical public relations introduced by Dr. C. C. Sherburne of Ohio, and adopted by the House of Delegates last December. In doing so, however, the work should be performed through the Executive Assistant called for above.

The committee approves parts 1 and 2 of recommendation no. 12 on page 16 of the Rich Report, which read:

> 12. We *Recommend*, therefore.
>
> 1. That each council and bureau be requested to identify in its field all legitimate organizations having cognate interests; then to develop in cooperation with the Executive Assistant, for Board approval, specific plans for establishing practical cooperative relationships with them.
>
> 2. That the execution of the approved programs be under the guidance of the General Manager's Executive Assistant.

BUREAU OF HEALTH EDUCATION

Your committee has studied with care that portion of the Rich Report pertaining to the Bureau of Health Education. It agrees with Rich Associates that here the Association possesses an instrumentality of great potential importance in public relations. While the achievements of this Bureau in many respects has been impressive, many helpful suggestions have been forthcoming. Your committee feels that this activity should be stimulated and its good work furthered. With this in mind, adequate personnel should be supplied and suitable junior executives created to assume responsibilities for the various phases of work. This has already been accomplished in the appointment of added personnel of high caliber (Dr. Smiley and Mr. Hein).

The report points out that the work of the Bureau of Health Education falls in two distinct and important parts: one is the health education of the public and the other is the school program. Each is equally important and neither can be neglected by the American Medical Association. Each should have the benefit of strong lay counsel. This report recommends that two advisory councils be appointed by the Board of Trustees to deal, respectively, with popular health programs and with school health programs. While your committee feels that definite responsibility for each of these two activities should be delegated to certain executives of the Bureau of Health Education, it questions the wisdom of more councils and greater bureaus. Your committee feels that the Director of the Bureau of Health Education should be responsible for the activities of this Bureau to the Board of Trustees. Policies of the Bureau are to be determined by the House of Delegates while the Board of Trustees acts as interim agent. Further cooperation with various educational bodies in order to cultivate the school health program is to be stimulated. This has been done in the past by the Bureau of Health Education.

With the substitution of the word "committees" for the word "councils," this committee approves recommendation no. 13 on page 18, of the Rich Report, reading:

> 13. We *Recommend*, therefore, that taking into consideration nominations by the Director of the Bureau and the Executive Assistant to the General Manager, the Board of Trustees appoint two advisory councils dealing respectively with school health programs and with popular health programs.

This committee approves recommendation no. 14 on page 19 of the Rich Report, which reads:

> 14. We *Recommend*, therefore:
> 1. The establishment of a "Health and School Section" of the Bureau.
> 2. The appointment of an Assistant Director to be in charge of this section.

Good progress has been made in the field of popular health education by our Association in the past; fertile fields lie ahead. Through various publications, releases and radio presentations immeasurable good will and education have been disseminated, a truly great work of public relations which could not but react favorably for our profession. Your committee recommends continued expansion in this field of activity.

With the addition of the words "Associate or" in front of Assistant Director, the committee approves recommendation no. 15 on page 20 of the Rich Report, reading:

> 15. We *Recommend*, therefore, the appointment of an Assistant Director to be in charge of Liaison with voluntary professional and lay organizations concerned with popular (as distinguished from school) health education.

Your committee feels that great good in health education can be accomplished through medical societies and voluntary medical service plans. Good progress has already been made in the larger medical societies, especially where paid executive secretaries are available. These avenues should be utilized further and the good start already made continued. The voluntary service plans offer an exceptional opportunity to contact the public and this means should be developed to the utmost. Adequate liaison with both the medical societies and voluntary medical service plans should be maintained and the Bureau should be ready to serve as voluntary consultant in the development and execution of their health education programs.

When the Bureau of Health Education develops to the point where the necessity for a field secretary is shown, the committee feels that recommendation no. 16 on page 21 of the Rich Report should be approved. This recommendation reads:

> 16. We *Recommend* the appointment of a field secretary to serve the voluntary plans as a consultant in the development and execution of their health education program.

The publications of the Bureau of Health Education were reviewed and suggestions were forthcoming. They were criticized from the standpoint of (1) out of date material; (2) extent of treatment; (3) method of treatment, and (4) format and make-up. It was suggested that the present out of date material be reviewed and if there is still a need for a particular publication it should be brought up to date, or if the need no longer exists the stock of such articles be scrapped. In this your committee thoroughly agrees; it cannot miss this opportunity to say that many articles which today are live material, tomorrow may be obsolete. This can best be exemplified by the rapid change brought about in treatment by introduction of the sulfa drugs and penicillin. Nevertheless, these suggestions should receive our earnest consideration. Your committee believes all publications should be periodically brought up to date, and when an article is found out of date it should be withdrawn from distribution. This is especially true of those containing inadequate material or those which by reason of format, illustrations and makeup are unattractive.

In reference to recommendation no. 17, page 22 of the Rich Report, your committee approves part 1 with the substitution of the words "withdrawn from distribution" for "scrapped."

Your committee approves part 2 of the recommendation with the addition that "a new list of classified health publications be prepared."

In reference to part 3 of the recommendation, your committee finds that this has already been done and therefore recommends this portion of the report.

In reference to part 4, your committee finds that this is already in force and, therefore, approves this portion of the recommendation. Recommendation no. 17, pages 22 and 23 of the Rich Report reads:

> 17. We *Recommend*, therefore, that:
> 1. The present stock of out-of-date pamphlets be immediately scrapped.
> 2. No further use be made of the present list of "Health Publications of the Bureau."
> 3. The Bureau be required to have each of its publications periodically reexamined as to scientific content by competent authorities.
> 4. Whenever a publication is found to be out of date it be withdrawn from distribution, and be rewritten if the subject is still important.

Your committee would like to suggest the great possibility for public relations through the greater utilization of the constituent state and component county societies. These societies are on the firing line, so to speak, and through them a great distribution of literature to the public can be accomplished.

Your committee approves recommendation no. 18 on page 23 of the Rich Report, which reads:

> 18. We *Recommend*, therefore, that to insure adequacy of treatment the indicated pamphlets be rewritten in consultation with a competent lay writer.

The committee feels that the need suggested in recommendation no. 19, page 24 of the Rich Report, is one calling for further investigation before approval. This recommendation reads:

> 19. We *Find Need* for popular editing and professional styling.
> Circulation: Reverting to the subject of the circulation of the Bureau publications
> We *Find Need* for (1) a wholly new catalogue or advertising leaflet, (2) separate advertising sheets for various groups of publications, (3) development of depository and distribution arrangements with state and county societies and (4) overall distribution and sale promotion by appropriate adaptations of proven business methods.

The report recognized the need and broadening influence of radio programs (recommendation no. 20, page 26 of the Rich Report) and the Committee concurs in the extent to which the recognition should be used in further study. Recommendation no. 20 reads:

> 20. We *Find Need* for competent assistance to aid in conceiving program ideas, procure and work with the best available script writers wherever they may be, obtain network sustaining time and inclusion in commercial time, supervise production, and advise state and county societies regarding the procurement and use of local time.

COUNCIL ON MEDICAL SERVICE

The name of this Council was changed at the San Francisco Session and its new duties clearly outlined by changes in the By-Laws.

In reference to recommendation no. 21 on page 28, part 1, of the Rich Report the change in the name of the council is already an accomplished fact, according to the By-Laws, under the name of Council on Medical Service and, therefore, the Committee approves the recommendation.

Regional Conference and Unorganized States. One of the functions of this Council, Chapter IX, Section 4, By-Laws, shall be "(6) to develop and assist committees on medical service and public relations originating within the constituent associations and component societies of the American Medical Association."

Conferences may be held on invitations from constituent associations or component societies. The composition of these conferences should be determined at the local level. The American Medical Association should encourage these conferences and cooperate with the local constituent association and component societies.

The News Letter and Present Deficiencies. Your committee suggests that the excellent News Letter of this Council be further improved as facilities permit and that it be given wider dissemination. It suggests further that the Council study and recommend other facilities for transmitting news to the profession and general public.

BUREAU OF MEDICAL ECONOMICS

Your committee sees no advantage to be gained by the proposed change in the name of this Bureau. This Bureau should, in our opinion, concern itself with the science of economics in its broadest sense with particular reference to the practice of medicine and public health. Its findings will, of course, be available to all.

BUREAU OF LEGAL MEDICINE AND LEGISLATION

In the opinion of your committee "it would be most unwise for the Association to become as 'legislation conscious' as Mr. Rich would have it do. It is an organization with scientific objectives and it should remain so."

The committee disapproves of recommendation no. 22, page 33, in the Rich Report, and in its stead recommends that the Bureau of Legal Medicine and Legislation be prepared to assist in the development of legislation in accordance with principles established by the House of Delegates. Recommendation no. 22 reads:

> 22. We *Recommend*, therefore, that the Bureau of Legal Medicine and Legislation be requested and be enabled systematically to prepare legislation based on the findings of the Bureau of Medical Economics and Social Medicine and on the experience of the Council for the Extension of Medical Care; this draft legislation to be submitted to the House of Delegates for its action.

The committee concurs in the need for the availability of virtually the same services as those mentioned for the Bureau of Medical Economics. Recommendation no. 23, page 34 of the Rich Report, reads:

> 23. We therefore *Find Need* for the availability of virtually the same services as those mentioned for the Bureau of Medical Economics and Social Medicine.

COUNCIL ON INDUSTRIAL HEALTH

Your committee is in agreement with the general recommendation concerning this council. It feels that common public relations with this council and other related councils and bureaus should be stressed. More attention should be paid to industrial and consumer groups in view of the recent developments in connection with the United Mine Workers Health Fund. This will obviously place extra work on this council necessitating additional experienced help. Finally, it believes that the work of this council should be commended and that this council should be implemented with sufficient funds and staff to broaden its work with labor, management and consumer groups.

The committee approves recommendation no. 24 on page 35 of the Rich Report reading:

> 24. We *Recommend* that in view of the great public relations contributions which can be made by this Council every possible encouragement and facility be given to the conduct of its work.

The committee concurs in the findings that there should be services supplied similar to those required by the Council on Medical Service, contained in recommendation no. 25, page 35 of the Rich Report, which reads:

> 25. And we *Find Need* for supplying services similar to those required by the Council for the Extension of Medical Care.

SCIENTIFIC COUNCILS AND BUREAUS

Each of the scientific councils and bureaus has an opportunity to improve our public relations. On account of the diversified activities and interests of the councils and the overlapping work of some of them, your committee would like to emphasize again the absolute necessity of having an executive assistant to the General Manager responsible for the public relations and publicity of all of these agencies.

FUNDAMENTAL PRINCIPLES

In any large organization, it is a fundamental principle that coordination of all activities of such an organization is absolutely essential. Your committee recommends the appointment of a capable and experienced executive assistant to the General Manager whose duty it shall be to coordinate and service all public relations activities of the Association. To do this, the Executive Assistant must be in attendance or have an experienced reporter in attendance at all important board, council and committee meetings and thereby acquire and coordinate the information necessary to carry out the duties of his office.

The committee concurs in the suggestions of this report in reference to *A*, *B* and *C* of recommendation no. 26, page 37 of the Rich Report, which read:

> Fundamental Principles: To build up desirable public relations there are three essentials for the American Medical Association as for any other organization: positive and constructive policies; effective, adequate and coordinated action; balanced and efficient promotional and interpretive facilities.
>
> It will be recalled that the recommendation on page 6, approved by the Executive Committee, calls for an Executive Assistant to the General Manager charged with *coordinating* and *servicing* all public relations activities of the Association.
>
> He must, therefore:
>
> A. Have the right to attend all Board, Council and Committee meetings and, when he considers it necessary, to express opinion regarding public relations aspects of their deliberations.
>
> B. Have means of receiving, and channels for disseminating, intelligence calculated to achieve coordination of all actions that hold public relations implications.
>
> C. Have direct responsibility and adequate provisions for the promotional and interpretive (publicity) assistants recommended below.

The committee approves recommendation no. 27, page 38 of the Rich Report, with the understanding that the attendance of the Executive Assistant or his reporter be subject to the approval of the General Manager. Recommendation no. 27 reads:

> 27. We *Recommend*, therefore, that the Board of Trustees at its next meeting take the indicated action with respect to its own meetings and formally request all councils and committees to do likewise.

Requirement B of this report necessitates that the Executive Assistant be informed through the General Manager of the problems that arise in the constituent state associations so that he can more properly formulate a positive program concerning the problems of extension of medical care and health legislation. Finally, the recommendation concerning a "House Organ" should be implemented, which would enable the American Medical Association to present to its membership the full picture of the ever changing problems of medical care both pro and con, and that in addition authoritative points of view on current stands of the American Medical Association should be published for the benefit of constituent state medical associations. The committee, therefore, approves recommendation no. 28 on page 39 of the *Rich Report* with the foregoing changes. That recommendation reads:

> 28. We *Recommend*, therefore
>
> 1. That a national "house organ" be established.
>
> 2. That the Executive Assistant be enabled to engage a competent reporter to handle this publication under his supervision.
>
> 3. That the Executive Assistant be responsible for procuring and developing the material for the "Organization Section" in The Journal and for notes of this character in *Hygeia.*

PUBLICITY

In reference to recommendation no. 29 on page 40 of the Rich Report this committee approves. That recommendation reads:

> 29. We *Recommend*, therefore,
>
> 1. That the present editor of the clip sheet be transferred to the office of the Executive Assistant with the understanding however, that his writing on scientific subjects and his contacts with writers on scientific matters be subject to the approval of the Editor of The Journal.
>
> 2. That the present "Bureau of Public Relations" be discontinued.

PAMPHLET PRODUCTION

The committee approves recommendation no. 30 page 40 of the Rich Report reading:

> 30. We *Recommend*, therefore, that the Executive Assistant be enabled to engage a competent person to conduct a centralized service of pamphlet production.

RADIO

The committee approves recommendation no 31, page 41 of the Rich Report that provision be made for a junior radio specialist on the staff, backed by highly experienced professional counsel, if, after study, it is justified by need and cost Recommendation no 31 reads·

> 31 We *Recommend* therefore, that provision be made for a junior radio specialist on the staff, backed by highly experienced professional counsel

VISUAL TECHNICS

Your committee is certain that close cooperation with the National Education Association is and can continue to be a powerful adjunct in public medical education.

The committee does not approve of recommendation no 32 in page 42 as it is written, but substitutes "We recommend, therefore, that all possible uses of visual technics be utilized backed by the advice of professional counsel"

PROMOTION

In reference to recommendation no 33, on page 43 of the Rich Report, the committee approves, subject to cost and demonstrated need, the recommendation reading

> 32 We *Recommend* therefore, that the Executive Assistant be enabled to engage a competent promotional specialist

SPEAKER'S BUREAU

In reference to the Speaker's Bureau on page 43 recommendation no 34, the committee recommends that the Speaker's Bureau should be not only initiated but activated and utilized to its fullest capacity That recommendation reads

> 34 Speaker's Bureau Since the need for a Speaker's Bureau has already been seen by the Trustees and since we fully concur no recommendation to initiate such a facility is needed We ought to express our judgment, however, that this should never become a mere group of itinerant professional speakers It should be essentially a national service bureau for the needs of national bodies and for the speaker's services which it is to be hoped, will be operated by a growing number of constituent societies It should actively identify up to the minute speakers on medical topics and find appropriate places for them to speak

CONTINUING COUNSEL

The committee recommends, therefore, that competent counsel be retained as advisor to the Executive Assistant and that all matters pertaining to public relations and publicity emanating from the counsel should be cleared through the office of the General Manager Your committee fully recommends that until the program is established and evaluated no long term contracts be entered into with reference to the employment of counsel or other lay personnel recommended by this report

APPENDIX A OF THE RICH REPORT

This material involves editorial, art, scientific, management and publicity departments In view of the steps already taken to reorganize and fortify some of these departments and the steps taken to inaugurate a new public relations department, your committee does not feel justified in doing more than recommending that these suggestions be called to the attention of proper executives to take such steps as they find necessary

The committee approves appendix A of the Rich Report which evaluates the Health Publications of the American Medical Association.

APPENDIX B OF THE RICH REPORT

Your committee has read with interest the criticism of this work, and again recommends that these criticisms be called to the attention of the proper authorities for such action as is necessary.

The committee approves appendix B of the Rich Report evaluating transcriptions submitted for audition

APPENDIX C OF THE RICH REPORT

This is a field of activity which is so controversial and so costly, and one in which competition with many other types of program is so keen, that this committee recommends that this whole problem needs further investigation before committing the American Medical Association to excessive expenditures

The committee approves appendix C of the Rich Report offering suggestions regarding expanded use of the radio

In conclusion your committee wishes to state that the complete implementation of this report will cost an estimated minimum of $300,000 annually, and feels that this delay of six months before taking final action on the Rich Report was warranted However, the work of this committee has been, to a large extent, rendered superfluous by the fact that the Board of Trustees initiated some of the recommendations of the Rich Report prior to the Rich investigation and many of the recommendations prior to the receipt of this committee's report for final action by the House of Delegates

Supplementary Report of the Judicial Council

Dr E R Cunniffe, Chairman, presented the following supplementary report of the Judicial Council, which was referred to the Reference Committee on Miscellaneous Business:

Report of Dr A. C. Ivy—This supplementary report concerns the report made by Dr A. C Ivy, who was sent to Europe as representative of the United States Government to review the war crimes of a medical nature committed by the Germans, which report was referred to the Executive Committee of the Board of Trustees, which in turn referred the matter to the Judicial Council

The Council finds that the experiments described in Dr Ivy's report are absolutely opposed to the Principles of Medical Ethics of the American Medical Association and are to be condemned In order to conform to the ethics of the American Medical Association, three requirements must be satisfied: (1) the voluntary consent of the person on whom the experiment is to be performed; (2) the danger of each experiment must be previously investigated by animal experimentation, and (3) the experiment must be performed under proper medical protection and management

Report of Committee on Centennial Celebration of American Medical Association

Dr E R Cunniffe, Chairman, presented the following report, which was referred to the Reference Committee on Miscellaneous Business

At the request of the Board of Trustees, the Committee on Centennial Celebration submits this preliminary report It is a progress report to inform you of the plans so far as they have been developed

The celebration will begin on Saturday night, June 7, when the Board of Trustees will give a dinner to several hundred of the most prominent laymen in the various walks of life in the United States—those interested in science, officers of allied professions, the financial world, editors, the Commander of the American Legion and men of national repute There will be three speakers at the banquet, one of whom has already accepted, and the committee is awaiting the answers to the other two invitations before announcing the names

The next day, June 8, will be known as "Medical Sunday" At 11 o'clock in the Auditorium, Atlantic City, three clergymen will speak on the spiritual side of medicine Their addresses will be broadcast over a nationwide hook-up. Each speaker will be allotted twenty minutes The speakers who have accepted our invitation are Rabbi Joshua Liebman of Boston, Dr. Ralph Cooper Hutchison, President of Lafayette College, formerly president of Washington and Jefferson College, and Monsignor Fulton J Shean of Catholic University, Washington, D. C.

It is hoped that the state associations will stimulate their component societies to urge all local clergymen to call attention to Medical Sunday and say a few words to their congregations about the services rendered by the medical profession during the past one hundred years

On the following day, Monday June 9, the Board of Trustees will give a dinner to the House of Delegates and officers and members of the different councils of the Association There will also be two motion pictures shown, one portraying the development of medical motion pictures and the other a picture being especially developed for this meeting by the March of Time

On Tuesday night, June 10, the President will be installed according to the traditions of our Association and there will be entertainment both before and after the addresses of the newly installed President and the retiring President The entertainment will be furnished by two artists reputed to be among the finest in the musical world.

Wednesday night, June 11, is reserved for the President of the United States, who will be invited early in the spring. However, it is considered wise to advise the special societies and fraternities that they should hold their banquets on that evening, since the President, if speaking, will surely be received by an overflow audience.

On Thursday night, June 12, the President's Ball will be held as usual, with three receiving lines—the retiring President, the President and the President-Elect. There will be two well known orchestras to furnish the music.

As special guests to be present at the General Scientific Meetings, the committee has invited Dr. Jonathan M. Meakins of Montreal, Canada, Dr. Watson Jones of London, England, and Sir Howard Florey of London, England.

The committee is asking all foreign countries either to send or to authorize a representative for their country to be present at our session.

Monday, June 9—2 p. m.

Presiding Officer: Edward L. Bortz, Philadelphia

The Antihistamine Drugs. George L. Waldbott, Detroit.
Poliomyelitis. Hart E. Van Riper, New York.
Significant Trends in Cancer Research.
Stanley P. Reimann, Philadelphia.
Cardiac Recovery. Jonathan M. Meakins, Montreal, Canada.
Intermission.

Monday, June 9—3:45 p. m.

Presiding Officer: Henry R. Viets, Boston

PANEL DISCUSSION ON THE MODERN MANAGEMENT OF HEART DISEASE

Paul D. White, Boston, Leader

Diet. William Bridges, Boston.
Digitalis. Harry Gold, New York.
Diuretics. Arthur De Graff, New York.
Quinidine. Louis Katz, Chicago.
Jonathan M. Meakins, Montreal, Canada
Question and Answer Period.

Monday, June 9—5 p. m.

General Summary. Paul D. White, Boston.

Tuesday, June 10—9 a. m.

Presiding Officer: Clyde L. Cummer, Cleveland

The Obstructive Prostate. Frank Hinman, San Francisco.
Presentation. Edward A. Strecker, Philadelphia.
Emergency Treatment of Vascular Occlusions.
Edgar V. Allen, Rochester, Minn.
Fractures. Watson Jones, London, England.
Intermission.

Tuesday, June 10—10:30 a. m.

Presiding Officer: Charles H. Phifer, Chicago

PANEL DISCUSSION ON EMERGENCY SURGERY

R. Arnold Griswold, Louisville, Ky., Leader

Head Injuries. Glenn Spurling, Louisville, Ky.
Abdomen. Henry H. Kessler, Newark, N. J.
Chest. Edward P. Churchill, Boston.
Extremities. Sterling Bunnell, San Francisco.
Watson Jones, London, England.
Question and Answer Period.

Tuesday, June 10—12 m.

General Summary. R. Arnold Griswold, Louisville, Ky.

Tuesday, June 10—2 p. m.

Skin Problems of the Elderly.
Uterine Bleeding. Norman Miller, Ann Arbor, Mich.
Radioactive Products in Medicine.
Stafford Warren, Rochester, N. Y.
New Antibiotic Agents.
Sir Howard Florey, London, England.
Intermission.

Tuesday, June 10—3:45 p. m.

Presiding Officer: Clyde L. Cummer, Cleveland

PANEL DISCUSSION ON ANTIBIOTIC THERAPY

Wesley W. Spink, Minneapolis, Leader

Streptomycin. Chester S. Keefer, Boston.
Chemotherapy in Surgery. John Lockwood, New York.
The Development of Bacterial Resistance to Antibiotics.
Philip Miller, Chicago.
Sir Howard Florey, London, England
Question and Answer Period.

Tuesday, June 10—5 p. m.

General Summary. Wesley W. Spink, Minneapolis.

The section meetings will be held as usual and each section will invite one foreign guest who is an outstanding man in that specialty to be present and read a paper on some subject of his choice. Another speaker, a member of the section, has been or will be chosen to read a historical paper on the development of that specialty during the last one hundred years. These papers will be published later and will form a very inclusive history of these different specialties. As a matter of fact, since there is a Section on the General Practice of Medicine, the development of the entire medical field will be covered for this period.

Most, if not all, of the sections have selected a list of names of foreign guests and have submitted that list to the program committee with choices listed as first, second and third. The committee has followed their wishes in practically all cases, selecting the men to be invited according to the desire expressed by the officers of that section. In a few instances, in order to get a wider distribution of our foreign guests, the committee has recommended a second or third candidate. Men from England, Scotland, France, Germany, Sweden, Norway, Switzerland, Chile, Argentina and Mexico have been invited. The committee has received information that the Department of State would like to assist us in securing two noted German physicians who are not in sympathy with the Nazi cause. When these names are submitted by the State Department, the committee will select and recommend its choice to the Board of Trustees.

This program of the sections will, of course, be supplemented by the usual complete number of scientific papers, and the committee is certain that it will be the best scientific program ever offered to the Association in its hundred years and will well deserve its place on the program of the centennial celebration. The committee has also sent a request to the Postmaster General of the United States, asking that commemorative stamps be issued during the time of the session. This matter will be pursued on the return of the Postmaster General to Washington.

It is probably unnecessary to announce that the history of the American Medical Association, portions of which are being published in The Journal of the American Medical Association, will be completed and offered to the public at that time. It is needless to say anything in praise of this history, as a reading of it will certainly reveal its merit.

The committee would like to make known the exceedingly valuable assistance given to it by Dr. Edward L. Bortz, Chairman of the Council on Scientific Assembly, Dr. Morris Fishbein, Editor of The Journal, and Dr. George F. Lull, Secretary and General Manager of the American Medical Association, and the complete cooperation of the Board of Trustees.

Respectfully submitted,

Edward R. Cunniffe, Chairman.
Thomas S. Cullen.
Warren F. Draper.
Thomas P. Murdock.
Walter F. Donaldson.
William J. Carrington.

On motion of Dr. James R. Reuling Jr., New York, seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried, the House rose from Executive Session.

Tuesday Afternoon—Continued

The House at 3:45 p. m. reconvened in regular session with the Speaker, Dr. R. W. Fouts, presiding.

Supplementary Report of Council on Medical Service

Dr. E. J. McCormick, Chairman, presented the following supplementary report of the Council on Medical Service, which was referred to the Reference Committee on Medical Service:

The American Cancer Society has established regulations for the control of information services, detection centers, service programs and diagnostic and treatment clinics. The American Cancer Society's control over any of these is only in the distribution of funds with the exception of the information services. None of these agencies can be set up or operated without the approval of the local county medical societies.

This control by the county medical society pertains not only to permission to set them up but to everything in regard to their operation, staffing and economic control. The American Cancer Society itself will not own or operate any agency. The only other agency which will have such a part in any of them is the American College of Surgeons, which will be requested to inspect the detection centers from a purely professional standpoint to determine whether or not they are doing a satisfactory professional job. This will be done just as the American College of Surgeons now inspects diagnostic clinics and hospitals.

The regulations which have been drawn up have been approved by the Professional Advisory Committee of the American Cancer Society, on which there are representatives of the American Medical Association, and by the Council on Medical Service of the American Medical Association.

It is recommended that the House of Delegates give approval to this program.

Report of Reference Committee on Rules and Order of Business

Dr. Edward P. Flood, *Chairman, presented the following* report of the Reference Committee on Rules and Order of Business, which was adopted on motion of Dr. Flood, seconded by several and carried:

Resolution on Appointment of Reference Committees and Resolution on Referring all Business to Reference Committees: Your committee has had before it a resolution from the Colorado State Medical Society and one of similar purport from the Utah State Medical Association. These resolutions are on the reference of all business to reference committees and on the appointment of reference committees.

Your committee has carefully read the resolutions and also the Constitution and By-Laws governing the appointment of reference committees. The Constitution and By-Laws adequately covers the questions raised in these resolutions and obviously anticipates that reference committees would be composed of duly elected members of the House of Delegates as specified in article 5, section 2 of the Constitution and in chapter VII, section 1 and chapter X, section 1 of the By-Laws.

Because of the above stated facts, your reference committee recommends that no action be taken on these resolutions.

Respectfully submitted,
Edward P. Flood, Chairman.
James P. Kerby.
Mather P. Pfeiffenberger.
Richard D. Simonton.
William D. Stovall.

Report of Reference Committee on Medical Education

Dr. J. F. Hassig, Chairman, presented the following report, which was adopted on motion of Dr. Hassig, duly seconded and carried after discussion and amendment, and after a motion was lost to recommit to the committee one portion of the report:

1. Report of the Council on Medical Education and Hospitals: Your reference committee reviewed the report of the Council on Medical Education and Hospitals of the American Medical Association which was read to the House of Delegates. This report is primarily a presentation of activities of the council in the last months and contains no specific recommendations requiring action of the House or recommendations to the House from this reference committee.

2. Supplementary Report of the Council on Medical Education and Hospitals: The supplementary report of the Council on Medical Education and Hospitals to the House contains two items requiring action by the House:

A. Your reference committee recommends that the House adopt the proposal of the Council providing for changing the wording of the "Essentials of an Acceptable School for Clinical Laboratory Technicians" to read "Essentials of an Acceptable School of Medical Technologists." Your reference committee recommends that in conformity with this change in title of the document there be changes throughout the text whenever the term "clinical laboratory technician" occurs to read "medical technologist."

B. In its supplementary report to the House of Delegates the Council on Medical Education and Hospitals also presented a modified version of the existing "Essentials for Approved Examining Boards in Specialties." These essentials set forth the principles regarding the establishment of specialty boards seeking approval by the American Medical Association. Your reference committee finds that no basic changes in principle occur in the revised essentials. The major changes are largely by way of clarification and expansion of the existing rather abbreviated form in which these essentials have been stated. The modified essentials appear to the reference committee to be more fully explanatory and to be more useful whenever there is consideration of the establishment of a new specialty board.

3. Report of Joint Committee for the Coordination of Medical Activities: The activities of this committee, formerly known as the Committee on Postwar Medical Service, are made freely available through publication of minutes of meetings in The Journal of the American Medical Association. The formal report of this committee to the House is a brief summary of recent activities of this committee. Your reference committee wishes to commend the past work of this committee through the difficult war years and believes that its future activities will likewise be of great importance in the world of medicine.

4. Report of Council on Scientific Assembly: The report of the Council on Scientific Assembly deals largely with special activities planned for the Centennial Celebration session in Atlantic City next year. The details of these plans were not presented in the general outline provided. The report promises a stimulating and interesting program.

5. Resolution on Rich Report: This resolution does not appear to your reference committee to lie in the field of its responsibilities and your committee wishes to return the resolution to the House of Delegates without recommendation or comment.

6. Resolution on Closer Cooperation Between the Medical and Dental Professions: This resolution appears to your reference committee to be worthy of serious consideration and study by the Board of Trustees of the American Medical Association.

7. Resolution on Teaching of Preventive Medicine and Public Health: This resolution calls attention to a field of medicine whose importance is continually increasing. Your reference committee feels that the attention paid to this aspect of medical education by the Council on Medical Education and Hospitals might be even greater than in the past.

Your reference committee recommends that this resolution be referred to the Council on Medical Education and Hospitals with the recommendation that it be employed as the basis for either an independent study of the teaching in this field or a portion of a more comprehensive study in which not only this *but all other aspects of medical education in our medical* schools might be comprehensively surveyed.

8. Resolution on Intern and Resident Medical Training: It appears to your reference committee that this resolution deals with a problem of importance in the hospital education of medical school graduates.

Your reference committee is in full accord with the statements in this resolution to the effect that internships and residencies should be evaluated entirely on the basis of the educational content of the training program and not on that of the monetary returns to the house officer. Your reference committee is cognizant that the Council on Medical Education and Hospitals is aware that house officerships of relatively inferior quality may seek to attract medical graduates through offering relatively large stipends. Your reference committee and the Council are agreed concerning the undesirability of this practice.

Your reference committee recommends that this resolution be referred to the Council on Medical Education and Hospitals for study with the recommendation that the Council's evaluation of internships and residencies should take into account any attempts on the part of a hospital to seek to offset deficiencies in the educational programs by an indefensible offering of financial remuneration.

9 and 10. Resolutions on Establishment of General Practice Sections in Approved Hospitals and on Requirements for Approval of Hospitals: The Resolutions on Establishment of General Practice Sections in Approved Hospitals and that on Requirements for Approval of Hospitals were considered together by your committee. This problem was thoroughly discussed by several who attended the meeting of the reference committee, which recognizes the problem presented in safeguarding the provision of hospital facilities for qualified physicians. The committee believes that the aims of these two resolutions may be met by the adoption of a single resolution embodying the important features of both resolutions. As a substitute for the two resolutions mentioned your reference committee recommends the adoption of the following resolution, and requests that the American Medical Association send a copy to the American College of Surgeons, the American College of Physicians, the American Hospital Association, the Protestant Hospital Association, the Catholic Hospital Association and every hospital in the country:

Resolved, That hospitals should be encouraged to establish general practitioner services. Appointment to a general practice section shall be made by the hospital authorities on the merits and training of the physician. Such a general practice section shall not per se prevent approval of a hospital for the training of interns and for residencies. The criterion of whether a physician may be a member of a hospital staff should not be dependent on certification by the various specialty boards or membership in special societies.

11. Resolution on Establishment of Certifying Board to Determine Qualification for General Practice: There is a resolution calling for the appointment of "a committee consisting of five members to formulate and recommend a plan for the establishment of a certifying board to determine qualifications for general practice." The importance of the problem of the general practitioner is recognized by your committee. This was discussed at great length by the reference committee and by the many who attended the open meetings of the committee. Your reference committee believes that the mechanism for this should follow the lines of the Essentials for Approved Examining Boards in Specialties which specifies that the board should be composed of representatives of the national organizations of that specialty including the related section of the American Medical Association.

Since the American Medical Association now has an established Section on General Practice, it would appear to your committee that this body, rather than a committee of the House of Delegates, should initiate this work. Therefore, the reference committee recommends the adoption of the resolution to read as follows:

Resolved, That the Section on General Practice of Medicine of the American Medical Association be requested to give consideration to a plan for the establishment of a certifying board to determine the qualifications for general practice and that the section be requested to make at least a preliminary report to the House of Delegates in June at Atlantic City.

12. Resolution on Standards Required for Certification by the Specialty Boards: Your reference committee is not aware of any actions of the American boards tending "to make more difficult entry of ex-service men to the boards." All the boards allow credit toward eligibility to applicants for the board examinations for appropriate service carried out in the armed forces. It does not appear appropriate to this reference committee to recommend to the American boards that credit for military service should be allowed except when medical officers carry out work in the field in which certification is desired in institutions providing adequate facilities under the direction of physicians competent to provide acceptable training in the specialty. In the opinion of your reference committee the American boards have adopted an understanding and fair policy in this regard.

Your reference committee recommends that this resolution be not adopted by the House of Delegates.

13. Resolution on Change of Policy of American Specialty Boards: The Colorado State Medical Society presented a resolution that the House of Delegates of the American Medical Association request the Advisory Board for Medical Specialties and the several American specialty boards to review and reconsider their policies in relation to residencies and preceptorships in the light of the fact that certain of the American specialty boards have recently announced discontinuance of their former practice of according credit for preceptorships. Your reference committee notes that ten of the fifteen existing American boards in the various specialties now award training credit for some sort for training of certification applicants under qualified preceptors. These boards have had reasonably satisfactory experience with the training provided under such preceptorships. Other boards have not found this type of training to be uniformly satisfactory in the training of candidates. Difficulties are especially likely to occur in the case of specialty boards in which large numbers of candidates are seeking certification. Certain of these boards have had unfortunate experiences with preceptorship programs. Incidents have been too numerous in which preceptors have apparently been more interested in securing assistance for themselves in their practices than in the education of the prospective specialist. In at least one of the boards not accepting preceptorship training it has been found that the performance of candidates in the certification examinations compares unfavorably with the performance of those trained in residencies. It would be of no service to candidates for certification to be lenient in the assessment of educational programs in the preparation for certification, if the following of such programs by the candidate results in failure at the board examination.

Your committee recommends that this resolution be not adopted.

Respectfully submitted,

J. F. Hassig, Chairman.
A. W. Adson.
Leland S. McKittrick.
Alfred S. Giordano.
Henry B. Mulholland.

Report of Committee to Consider Revision of Constitution and By-Laws

A copy of the present Constitution and By-Laws and a copy of the proposed new By-Laws as prepared by the Committee to Consider Revision of the Constitution and By-Laws were distributed to each delegate and Dr. F. F. Borzell, Chairman, of the committee, read the explanatory introduction as follows:

The House of Delegates at its last session, on motion of Dr. Lowell S. Goin of California, authorized the appointment of a committee to consider revision of the Constitution and By-Laws. In obedience to this action this committee, appointed by your Speaker, begs to present a report of its deliberations to date.

It was evident at our initial review of the present By-Laws and because of certain recent actions taken by the House calling for more immediate action, that we should concentrate our first attention on the By-Laws, leaving revision of the Constitution for final consideration next June. This decision was also influenced by the fact that the By-Laws may be revised immediately at the session in which such revisions or amendments are presented, but constitutional revisions or amendments require publication and a year's delay before final action at an annual session.

The committee also considered it beyond its province to propose any changes which depart widely from the basic intent of the present By-Laws. The changes therefore recommended are mainly those of rewording, rephrasing, recodification and rearrangement. These were all found necessary in order to correct and improve a set of By-Laws which has become, by reason of amendments, rather incongruous and illogical in arrangement. The changes made are minor in substance and in no way materially alter the recorded actions of the House.

The committee would prefer to have the proposed revision read word for word except in those sections where the wording of the present By-Laws is unchanged. By this approach we can perhaps present the reasons for each change as it applies to the part under consideration. Since the proposed revision poses a rearrangement of the parts as compared to the present By-Laws, it will be necessary for this House to act on the entire proposal at one time, subject to such modifications as it may see fit to make. In other words, the House must first express its approval of the revision in order to be prepared to revoke the present By-Laws and immediately adopt the revision.

It should be understood that the committee will, in accordance with the original motion, continue its deliberations on a revision of the Constitution and report at the next annual session.

Nothing in this proposed revision of the By-Laws involves any change in the Constitution.

Respectfully submitted,

Francis F. Borzell, Chairman.
Louis A. Buie.
Edwin S. Hamilton.
Joseph D. McCarthy.
Stanley H. Osborn.
B. E. Pickett Sr.
Floyd F. Winslow.
T. V. McDavitt, Secretary.

Dr. Borzell then suggested that the delegates study the proposed new By-Laws with certain indicated corrections for action on Wednesday.

Report of Reference Committee on Legislation and Public Relations

Dr. Charles H. Phifer, Chairman, presented the following report:

1. Resolution on Appointment of Surgeons General: Regarding the resolution presented with the report of the Committee on National Emergency Medical Service concerning the Surgeons General of the Army, Navy and Public Health Service and the Chief Medical Officer of the Veterans Administration, your Reference Committee suggests the substitution of the following resolutions:

Resolved, That the Secretary of the American Medical Association inform the President of the United States, the Secretary of War, the Secretary of the Navy and the Federal Security Administrator of the willingness of the American Medical Association, through a committee appointed for that purpose, to confer and cooperate with them in the important question of the selection of a Surgeon General for the Army, the Navy and the United States Public Health Service; be it further

Resolved, That the President of the United States, the Secretary of War, the Secretary of the Navy and the Federal Security Administrator be informed of the intensive study of war medicine which the association is conducting, and that the results of this study will be made available to them.

2. Resolution on Fellowship of Members of Permanent Corps of Veterans Administration: Your reference committee has considered this resolution and recognizes that it falls into two natural divisions: (1) the provision for representation of the Medical Department of the Veterans Administration in this House; (2) the admission to Fellowship of the members of the permanent corps of the administration without the payment of dues. Your committee considered these separately. In reference to the first division regarding the representation in the House of Delegates, your reference committee has very carefully weighed this question and its responsibilities. It is deeply conscious of the fact that the recent acts of Congress have established the Veterans Administration as a permanent medical corps of the United States, with General Hawley in charge of the program for medical care of the veterans, a position comparable to the Surgeon General of the Army, Navy and Public Health Service.

Therefore your committee recommends that the Veterans Administration be given representation in the House of Delegates and that the House proceed to take such steps as are necessary to accomplish this.

Regarding the second division as to Fellowship, your reference committee believes that due to the fact that the Veterans Administration has been authorized to care for 15 million veterans, the members of the permanent medical corps should receive the same consideration as that given to medical officers of the Army, Navy and Public Health Service with the understanding that Fellowship will continue only as long as they remain members of the permanent corps of the Veterans Administration. Such Fellows shall not receive The Journal or other publications of the American Medical Association except by their personal subscription. Your committee recommends the adoption of this section of the report.

3. Resolution on Sponsoring a National Conference of Officers of County Medical Societies: Your reference committee is most conscious of the high ideals that the proponents hope to obtain through the adoption of this resolution. Your committee is likewise most receptive to any constructive medical educational program. Your committee appreciates that this resolution involves numerous factors. It questions whether the program would not be more effective on a state or regional level rather than on a national level.

Because of the many facts that must be taken into consideration in reference to this resolution, your reference committee recommends that it be referred to the Board of Trustees for study and consideration as to its feasibility and value, with the request that the Board report its recommendations on this resolution to the House of Delegates in June 1947.

4. Resolution on Prohibition of Political Activity on Part of United States Public Health Service: Your reference committee shares the indignation expressed by the writer of this resolution but recommends as a more practical substitute the following resolution:

Whereas, The Surgeon General of the U. S. Public Health Service in a directive dated Dec. 10, 1945 and addressed to all officers of the Public Health Service, used the following language: "Every officer of the Public Health Service will wish to familiarize himself with the President's message [reference made to the message from the President to the Congress on Nov. 19, 1945] and will be guided by its provisions when making any public statement likely to be interpreted as representing the official views of the Public Health Service"; and

Whereas, It is the opinion of the House of Delegates of the American Medical Association that this is neither a proper activity for the Surgeon General of the Public Health Service nor in accord with American practice in prohibiting the free expression of opinion; be it

Resolved, That the House of Delegates of the American Medical Association express its complete disapproval of this conduct of the Surgeon General of the Public Health Service of the United States.

Respectfully submitted,

Charles H. Phifer, Chairman.
Thomas P. Murdock.
John J. Masterson.
Lowell S. Goin.
Edward Jelks.

Dr. Phifer moved adoption of the first section of the report of the reference committee and the motion was duly seconded. After discussion, it was moved by Dr. James R. Reuling Jr., duly seconded and carried, that this section of the report of the reference committee be rereferred to it.

Dr. Phifer moved adoption of the second section of the report of the reference committee, and the motion was duly seconded. After discussion, Dr. G. Henry Mundt, Illinois, moved that this section of the report of the reference committee be rereferred to it, and the motion was regularly seconded and carried after discussion.

The third and fourth sections of the report of the reference committee were adopted, after discussion, on motions of Dr. Phifer, duly seconded and carried.

NEW BUSINESS

Resolutions on Veterans Administration Contracts

Dr. Herbert Bauckus, on behalf of the New York delegation, presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

Whereas, The Medical Society of the State of New York has learned that certain proposed contracts of the United States Veterans Administration with hospitals include as a part of the hospital service the practice of anesthesiology, pathology, radiology and physical therapy; and

Whereas, The rendition of these services constitutes the practice of medicine; therefore be it

Resolved, That the House of Delegates of the American Medical Association requests the U. S. Veterans Administration not to include the practice of anesthesiology, pathology, radiology and physical therapy as part of such contracts with hospitals; and, further, be it

Resolved, That the Secretary of the American Medical Association be requested to transmit a copy of this resolution to General Paul R. Hawley, Chief Medical Director, U. S. Veterans Administration.

Resolution on Woman's Auxiliary

Dr. Thomas K. Lewis, Special Committee on Executive Session for Consideration of Rich Report, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

Whereas, The Rich report, in survey, has shown the value of the Woman's Auxiliary; and

Whereas, The need for further expansion of the Woman's Auxiliary is proved; and

Whereas, We have repeatedly seen how effectively these groups may operate and how helpful they may be in public relations, especially demonstrated at the San Francisco Session in July, 1946; therefore be it

Resolved, That this House of Delegates recommend the extension of the development of the Woman's Auxiliary organizations, and that they be provided with a definite program.

On motion of Dr. William Weston, Section on Pediatrics, seconded by several, the House recessed at 6:10 p. m. until 9 a. m. Wednesday, Dec. 11.

(To be continued)

Washington Letter

(From a Special Correspondent)

Dec. 20, 1946.

Army-Navy Research Board Viewed as Forerunner of Merger

The Joint Research and Development Board in pioneering Army-Navy coordination in research is regarded as blazing a trail toward an ultimate merger of the services, if that is ever enacted by Congress. The board has obtained high caliber personnel by clearing them through such scientists as James Conant and Ernest Langmuir, and a unique rotation plan also assures competence. Full time staff members above the clerical level will remain only a year or so and will then be replaced by other topnotch scientific workers. The organization is also staffed by ranking scientists and technicians from the Army and Navy who will also be rotated. Key civilian personnel posts have been filled by top scientists and engineers, with influential committees headed by Nobel Prize winner E. E. Rabi, Karl Compton, Julius Stratton and others. Standards are so strict that after five months the staff is still far from complete. Dr. Vannevar Bush, the wartime chief of the Office of Research and Development, is chairman. The Joint Research and Development Board was formed by the Secretaries of War and Navy to coordinate the services' large research programs, and it was granted full power to eliminate duplication and allocate responsibility to each service in various fields of scientific investigation.

President Truman Appoints Atom Advisory Committee

President Truman has announced the appointment of a general advisory committee to advise the Atomic Energy Commission on scientific and technical matters. James B. Conant, president of Harvard University, will head the new group, and other members are: Lee A. Du Bridge, president, California Institute of Technology; Enrico Fermi, professor of physics, University of Chicago; J. R. Oppenheimer, wartime director, Los Alamos Laboratories of the Manhattan District; I. I. Rabi, professor of physics, Columbia University; Hartley Rowe, vice president, United Fruit Company; Glenn T. Seaborg, chief radiochemist, Manhattan District at the University of Chicago; Cyril Stanley Smith, director, University of Chicago's Institute of Metals, and Hood Worthington, chemical engineer, Du Pont de Nemours & Co.

Two Hundred Days of Combat Duty Reported As Limit of Human Endurance

Drs. John W. Appel and Gilbert W. Beebe of Philadelphia, Army psychiatrists, writing in the Bulletin of the U. S. Army Medical Department, report that two hundred days of combat duty, not necessarily continuous, is about the limit of human endurance. They claim there is no such thing as "getting used to combat."

Official Notes

A. M. A.-N. B. C. CENTENNIAL BROADCASTS

In celebration of the Centennial year of the American Medical Association, 1947, the twelfth annual series of the A. M. A.-N. B. C. dramatized broadcasts are devoted to features of medical progress in the United States during the hundred years of the existence of the American Medical Association.

For purposes of the broadcast, the United States is divided into twenty-five regions. These regions have been chosen with a view to grouping together states which have similar history and similar general characteristics, such as the four states of the Rocky Mountain region, the two groups of New England states, the Southeastern and the Central Southern groups.

One broadcast is devoted to medical progress in each of these regions, and the twenty-sixth and closing week will deal with the hundred years of the American Medical Association from a nationwide point of view.

The title for the series is "Doctors—Then and Now" and the theme is "A Century of Progress by American Medicine."

The dramatic scripts are written by William J. Murphy, veteran medical script writer responsible for most of the previous A. M. A.-N. B. C. series; production is directed by Norman Felton, director of the two preceding series; Joseph Gallicchio is again directing the N. B. C. orchestra. Arrangements with N. B. C. have been made through the office of Miss Judith Waller, public service director, central division, National Broadcasting Company.

The four dates for January with topics are as follows: January 4, South Carolina, Florida and Georgia, subject Crawford W. Long; the speaker, to be announced, will broadcast from station to be announced. January 11, New York, subject Stephen Smith; the speaker, Dr. William Hale, will broadcast from station WEAF, New York City. January 18, Louisiana; subject François Marie Prevost; the speaker, to be announced, will broadcast from station WSMB, New Orleans. January 25, Indiana; subject John S. Bobbs; the speaker, Dr. Floyd T. Romberger, will speak from station WIRE, Indianapolis.

Subsequent programs will be announced as soon as they are ready.

TELEVISION PROGRAMS

Additional programs scheduled for presentation over television station WBKB, Chicago, are as follows:

January 2.	Rheumatic Heart Disease. Dr. Jesse W. Hofer.
January 16.	Industrial medicine. Dr. J. H. Chivers, Dr. Harold R. Hennessy.
January 30.	Child health clinics. Mrs. Virginia Shuler.

A program on plastic surgery, with Dr. Paul Greeley, was given for December 19, too late to announce.

Helpful cooperation on the part of the television station has resulted in continued improvement of the technic of health education through this medium. Acceptance of the basic principle that such education is an important and necessary service to the public is well established.

Coming Medical Meetings

Annual Congress on Medical Education and Licensure, Chicago, Palmer House, Feb. 10-11. Dr. Victor Johnson, 535 N. Dearborn St., Chicago 10, Secretary.

Central Surgical Association, Chicago, Feb. 20-22. Dr. Walter G. Maddock, 250 East Superior St., Chicago, Secretary.

Mid-South Postgraduate Medical Assembly, Memphis, Tenn., Feb. 11-14. Dr. Arthur F. Cooper, 1479 Carr Ave., Memphis, Secretary.

Pacific Coast Surgical Association, Seattle, Feb. 17-18; Victoria, B. C., Feb. 19-21. Dr. F. L. Reichert, Stanford University Hospital, San Francisco, Secretary.

Southeastern Allergy Association, Atlanta, Ga., Jan. 18-19. Dr. Katharine B. MacInnis, 1515 Bull St., Columbia 49, S. C., Secretary.

GOVERNMENT SERVICES

VETERANS ADMINISTRATION

SOME VETERANS MUST REPORT EARNINGS AT ONCE

Veterans in school or training under the G. I. Bill who have not reported their earnings to the Veterans Administration should report them immediately by letter or postcard without waiting to find an official report form. While these veterans have been temporarily suspended from subsistence allowance rolls, they can get back on the list and receive any money to which they are entitled merely by sending the necessary information to their regional office. The report to the regional office must include the veteran's earnings from productive labor during August, September and October, so that the Veterans Administration may adjust subsistence payments to meet the limitations set by Congress in public law 679, approved August 8. The law specifies that if a veteran's subsistence under the G. I. Bill and his earnings from productive labor total more than $175 a month (without dependents) or $200 (with dependents), his allowance must be reduced so that the combined total will not exceed those figures.

If the veteran's report shows that he is entitled to the full subsistence allowance, he will receive the entire sum due him since he was suspended. If his income from an employer is high enough to require a reduction in the allowance, he will receive the reduced sum to which he is entitled. If his report shows he is no longer entitled to any allowance because his income from employment is above $175 or $200, the veteran will have a chance to decide whether he wants to have the Veterans Administration discontinue supervision of his training so he can save the rest of his eligibility for other school or training courses later.

The Veterans Administration set November 5 as the deadline for receiving the reports from veterans who were in training at the time the law was passed. Not included in the group required to report earnings by November 5 were veterans who were in training but not receiving a subsistence allowance and those who entered or reentered school or training this fall. The latter filled out a different form when they entered. Disabled veterans enrolled under the Vocational Rehabilitation Act also are not affected.

INSURANCE AGAINST TOTAL DISABILITY

Veterans who have National Service Life Insurance now may be insured against total disability. Total disability income benefits authorized by recent legislation may be added to any plan of National Service Life Insurance on application, proof of good health and payment of an extra premium. In its announcement the Veterans Administration said that premium rates for the disability coverage range from 6 cents to 94 cents a month per thousand dollars of insurance, depending on the insured's age and type of policy. The disability benefits are at the rate of $5 a month for each thousand dollars of insurance and are payable after the veteran has been totally disabled continuously for six months or more. The monthly benefits will continue to be paid as long as the insured remains totally disabled. However, the disability must commence before the veteran's sixtieth birthday. The face value of the veteran's policy will not be reduced by any disability payments that he might receive.

Veterans with service connected disabilities less than total in degree are not prevented from taking advantage of the new provision, provided they apply for it before Jan. 1, 1950. In these cases such disabilities are waived if they are the only bar to meeting the health requirements. Veterans who wish to obtain full information about the new disability income feature should apply to their nearest VA office.

TEN WOMEN DOCTORS APPOINTED CONSULTANTS

Ten women doctors have been appointed as consultants on medical care for women veterans in Veterans Administration hospitals and homes, Dr. Margaret D. Craighill, former dean of the Women's Medical College of Pennsylvania, and VA's chief consultant on medical care for women veterans, has announced. This group, all veterans of World War II, will work with VA branch office and central office medical staffs in advisory capacities. The women consultants are Dr. Marian C. Loizeaux, Boston; Dr. Margaret Janeway, New York; Dr. Jane Liebfried, Philadelphia; Dr. Gertrude R. Holmes, Greenville, S. C.; Dr. Grace Haskin, Cleveland; Dr. Angie Connor, Fort Thomas, Ky.; Dr. Elizabeth D. Fletcher, Little Rock, Ark.; Dr. Eleanor B. Gutman, Coquille, Ore.; Dr. Hulda E. Thelander, San Francisco, and Dr. Ruth Bergess, Roosevelt, Utah.

CHINESE OFFICERS STUDY AMERICAN METHODS

Six Chinese army medical officers recently visited Dr. Paul R. Hawley, chief of the Veterans Administration medical service, to make a detailed study of procedures for handling problems of American war veterans. The Chinese administrative team is composed of Major Gen. Hsi-lin Hsu, surgeon general, Chinese army ground forces; Col. Chan Chao, army service forces; Col. Ling-sun Woo, division of medical service; Col. Tah-mou Peng, division of technical service; Col. Ping Shiao, division of rehabilitation, and Major Wen-tah Yang, hospital administration branch. These officers are spending six months in the United States studying the organization and functions of various military and civilian medical organizations for the purpose of revising the medical service of the Chinese Army.

PERSONAL

Dr. William S. McCann, head, Department of Medicine, University of Rochester School of Medicine and Dentistry, has been appointed to the Naval Research Advisory Committee, which will consist of not more than fifteen persons selected from civilian life to serve for one year. Dr. McCann served in the Army Medical Corps in World War I in Panama, England, France and Germany and in the Navy Medical Corps in World War II as chief of clinical activities on the U. S. S. *Refuge* during the North African campaign and during the invasions of Normandy, southern France and Italy.

VETERANS' HOSPITALS

The Veterans Administration was, as of Nov. 25, 1946, operating twenty-four former army and navy hospitals to meet the growing need for hospital space. Sites have been selected for sixty-three of the eighty-nine new hospitals that the Veterans Administration is authorized to build in the world's largest hospital construction program. The Veterans Administration cleared over 84,000 requests for physical examinations during September 1946 for pensions or compensations, the highest total to date.

TUBERCULOSIS HOSPITAL AT MADISON

The War Department has announced that army engineers have awarded the architect-engineer contract for the Veterans Administration Hospital at Madison, Wis. This is to be a 500 bed tuberculosis hospital. The engineers will advertise for construction bids after the preliminary plans have been converted into permanent plans. Work will be carried on under the supervision of the Upper Mississippi Valley Engineer Division and the Rock Island Engineer District.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Anderson, William D.	Tuscaloosa
Boudreau, Floyd T.	Mobile
King, Hiram G.	Bessemer
McBurney, Robert P.	Tuscaloosa
Porter, Charles E.	Birmingham
Shell, James R.	Abbeville
Sullivan, Claude C. Jr.	Northport
Upchurch, Samuel E.	Clanton

California

Abbott, Arnold W.	Redlands
Barker, Robert C.	Modesto
Bartlett, Isaac E.	Inglewood
Boyes, Joseph H.	La Canada
Chase, Robert N.	Garden Grove
Dooley, Robert F.	Oakland
Gomes, Howard J.	Los Angeles
Gordon, Martin N.	Los Angeles
Hale, Fredric A.	Sacramento
Ho, Wayne Y.	Los Angeles
Hokholt, Carl A.	Stockton
Isoard, Max C.	Sacto
Klingel, Robert W.	San Francisco
Klor, Samuel J.	N. Hollywood
Kuffel, Mark J.	Los Angeles
Lee, George Q.	Oakland
Lowenstein, Bernard	San Francisco
McEwen, William L.	Taft
McFarland, George E.	Los Angeles
Miller, Deibert J.	Pasadena
Naquet-Hamilton, Henry J.	Berkeley
Nittler, Alan H.	Santa Cruz
Persike, Edward C. Jr.	San Francisco
Putnam, Frank I.	Livermore
Richardson, George E.	Santa Monica
Rose, Clifton P. Jr.	Oakland
Rulison, Elbert T. Jr.	Napa County
Shearer, Edward J.	Colton
Torgerson, Thomas M.	Santa Rosa
Vollert, Edward F.	San Francisco
Walsh, John W.	Eureka

Colorado

Baker, William G.	Denver
Breitzer, Bernard	Denver
Griffith, Eugene R.	Crowley
Harrington, Robert B.	Grand Junction
Leder, Max M.	Denver
McCunniff, William B.	Antonito
Motter, George N.	Trinidad
Shontz, William C.	Pueblo
Tarjan, George	Denver

Connecticut

Bisaccia, Leonard J.	New Hartford
Craige, Branch Jr.	New Haven
Czyz, Stanley I.	Thomaston
De Wolfe, Victor G.	Stamford
Klebanhoff, Harry E.	New Haven
Shea, Cornelius J.	Bridgeport
Wolfson, Dexter	Bethel

Florida

Baker, Juel M.	Miami
Barranco, Anthony J.	Lake Wales
Karmiol, Jerome	St. Petersburg
Keller, Julian J.	St. Petersburg
Tamarkin, Samuel	MacDill Field
Thomas, William C. Jr.	Gainesville

Georgia

Anderson, Robert T.	Hillsboro
Arrendale, Joel J.	Tiger
Avera, Bertram P. Jr.	Wrens
Butler, Clarence C.	Columbus
Erwin, Goodlow Y.	Athens
Hardman, Billy S.	Gainesville
Jackson, Robert T.	Macon
Klapper, Claude	Atlanta
MacQuigg, David E.	Columbus
Wootten, Louis O.	Cordele

Illinois

Bedessem, Philip M. Jr.	Chicago
Blix, Fred M. Jr.	Chicago
Bornstein, Frederick P.	Chicago
Chung, Joseph T.	Chicago
Davis, Jack E.	Chicago
Fahnestock, Edward A.	Bridgeport
Falk, Nathan	Chicago
Field, Robert E. H.	Blue Island
Fitch, Franklin R.	Villa Park
Foucek, B. Charles	Berwyn
Grant, John F.	Glencoe
Hall, Thomas D.	Chicago
Huss, Norman C.	Chicago
Kass, Harold M.	Chicago
King, Walter W.	Peoria
Knudtson, Herbert M.	Chicago
Koff, Harold R.	Chicago
Kosse, James	Chicago
McDonald, James A.	Wheaton
Martens, Edward J.	Chicago
O'Berto, Albert L.	Chicago
Oester, Yvo T.	Chicago
Pagano, Clarence J.	River Forest
Reischer, Adam	Chicago
Rosner, David C.	Chicago
Schaffran, Morton	Chicago
Shapiro, Joseph	Chicago
Snead, Claude R.	Chicago
Soltes, Frank J.	Chicago
Souders, John C. Jr.	Rock Island
Stanton, George T.	Chicago
Stoddard, Leland D.	Mount Carmel
Sykes, Robert H.	Geneva
Walker, Allen E.	Chicago

Indiana

Aronson, Sidney S.	Indianapolis
Bunge, Clarence E.	Logansport
Hambley, William C.	Mishawaka
Kisner, Paul	Terre Haute
McDonald, Richard	Muncie
Talbott, Dan E.	Indianapolis

Kentucky

Borsch, Warren W. Jr.	Louisville
Estes, Woodrow B.	Williamsburg
Evans, Ira C.	Lexington
George, Eli J.	Louisville
Mauch, Stewart W.	Louisville
Rodgers, George M. Jr.	West Point
Talley, William R.	Louisville
Waldrop, Claude C.	Owenton

Louisiana

Baranco, Paul F.	Jackson
Bayon, Philip J.	New Orleans
Bostick, John N.	Gilbert
Carter, Sandy B.	New Orleans
Katz, Jerome B.	New Orleans
Le Blanc, Edward J. Jr.	Abbeville
McElwee, John R.	Mangham

Massachusetts

Angley, John C.	Bryantville
Bloomenthal, Herbert M.	Boston
Chase, Philip B.	Springfield
Codin, Kenneth (Name changed from "Cohen," Kenneth 13 Sept. 1943)	Lynn
Cotsonas, Nicholas J. Jr.	Cambridge
David, Lloyd G.	Lowell
Elliston, William A.	Weston
Giddings, Lane	Gt. Barrington
Hahn, Edward O.	W. Somerville
Hirsch, Frank A.	Andover
Kanter, Stanley S.	Boston
Kaplan, Melvin S.	Brookline
Kennan, Fred J.	Boston
Kilgore, Philip E.	Lynn
McGovern, Richard A.	Lawrence
Moore, Merrill	Squantum
Morse, Edward K.	Waban
Peterson, Edwin W.	Boston

Massachusetts—Continued

Robinson, Benjamin R. Jr.	Worcester
Rosenberg, Isadore N.	Boston
Rosenberg, Joseph	Fitchburg
Rowson, Walter Jr.	E. Braintree
Stitt, Albert A.	Brighton
Tabor, Edward O. Jr.	Lowell
Troubalos, Stephen	Brighton
Wagner, Samuel L.	Boston
Woodruff, Richard S.	Pittsfield

Michigan

Armstrong, Richard C.	Ann Arbor
Asselin, Dean R.	Detroit
Backe, John C.	Corunna
Davidson, Harry O.	Detroit
McDonnell, Edward E.	Scottville
McGaughey, Clark G.	Ann Arbor
McGough, Joseph M.	Detroit
Maynard, Frederick M.	Detroit
Murphy, Timothy R.	Crystal Falls
Runde, Harold E.	Detroit
Rupp, Robert H.	Detroit
Rush, Alva D.	Battle Creek
Spagnuolo, Alfred J.	Mount Pleasant
Waring, Thomas P.	Ann Arbor
Wilson, Andrew G.	Detroit
Winegar, Alvon C.	Lapeer

Minnesota

Albers, George D.	Rochester
Armstrong, Ralph S.	Mahnomen
Arnesen, John F.	Newport
Avrick, Alan M.	St. Paul
Batdorf, B. Niles	Maple Plain
Bossingham, Earl N.	Walker
Bushard, Marcus C.	New Ulm
Engstrom, William W.	Rochester
Enquist, Irving F.	Duluth
Falsetti, Frank P.	Rochester
Hunner, Earl E.	Duluth
Korum, Lyle W.	Minneapolis
Lagaard, Sheldon M.	Minneapolis
Litman, Neil N.	St. Paul
Nelson, Carl G.	Minneapolis
Nelson, Wallace I.	Minneapolis
Perkins, Roy F.	Rochester
Perry, John W.	St. Paul
Petersen, Glenn L.	Minneapolis
Rygh, Harold N.	Ashby
Tosseland, Noel E.	Milaca
Trow, William H.	Minneapolis

Mississippi

Applewhite, Austin H.	Columbia
Flautt, James R. Jr.	Swan Lake
Follo, Marshall L.	Ann Arbor
Izard, Samuel E. Jr.	Newhebron
McDill, John E.	Jackson
Rude, Joe C.	Jackson
Weems, William E.	Shubuta
Wigginton, Roy C.	Corinth
Yates, Claud F.	Canton

Missouri

Anthony, Dallas D.	Springfield
Arnoldi, Louis B.	Cape Girardeau
Ashley, Hugh V. Jr.	Cape Girardeau
Beatty, Arch J.	Warrensburg
Davis, Martin W.	Webster Groves
Eubank, Dillard M.	Raytown
Firminger, Harlan I.	St. Louis
Gunn, Richard W.	Kansas City
Kennedy, Walter J. Jr.	Sedalia
Krupkin, Nathan R.	St. Louis
Miller, Elmer B.	St. Louis
Miller, Richard C.	Kansas City
Motley, Hurley L.	Columbia
Peugnet, Hubert B.	St. Louis
Rusk, Howard A.	Brentwood
Stephens, Louis F.	St. Louis
Viviano, Joseph G.	St. Louis
Witt, Clyde M.	St. Joseph

PHYSICIANS SEPARATED FROM SERVICE

New Jersey

Allen, Robert P.	Red Bank
Anderson, Robert C.	Newark
Apter, Abraham H.	Paterson
Aria, Charles J.	Jersey City
Arndt, Frank R.	Cliffside Park
Baime, Jules E.	E. Orange
Baldwin, John F.	W. Englewood
Barnett, Arthur M.	Ridgewood
Barroway, James N.	Camden
Beddall, John T.	Collingswood
Berk, Lester I.	Red Bank
Blasi, Benjamin R.	Newark
Bowen, Robert N.	Woodlynne
Brady, Edwin H.	Arlington
Braun, Edgar M.	Newark
Braveman, Bernard L.	Princton
Copeland, Glenn J.	Arcade
Davidson, Jack D.	Glen Ridge
Esterman, Louis M.	E. Paterson
Eynon, James R.	Collingswood
Fahrenbruch, Frederick D.	Mount Holly
Fairlie, Chester W. Jr.	Essex Falls
Friedman, Sidney	Jersey City
Harley, Robison D.	Pleasantville
Heus, E. George	Fort Lee
Ledden, Lewis J.	Trenton
McCormack, Raymond A. Jr.	Trenton
Miniszek, James H.	Avon
Movelle, John B.	Asbury Park
Nimaroff, Harold	Newark
Ransom, Leland B.	Westfield
Rusin, Michael J.	Garfield
Saxe, Theodore L.	Passaic
Sussman, Irvin	Woodbury
Taffet, Seymour	Belleville
Triolo, John V.	Summit
Wert, Earl B.	Westmont

New York

Alpert, Herman S.	Thielle
Amoruso, John	New York
Amster, Milton W.	Brooklyn
Arnold, Samuel A.	Bay Shore
Avitabile, Adrian R.	Brooklyn
Bacchiani, Torquato L.	Nesconset
Bacile, Victor A.	Poughkeepsie
Bailey, Harmon J.	Rye
Bantleon, George F.	Rochester
Barbour, Paul H. Jr.	Brooklyn
Bickerman, Hylan A.	Forest Hills
Bone, Kenneth W.	Kenmore
Bowen, Raymond J.	Binghampton
Bryan, Fred A.	Rochester
Carra, Angelo D.	New York
Dale, John H. Jr.	New York
Daniels, Melvin R.	Yonkers
Drenick, Ernst J.	New York
Drucker, John J.	Forest Hills
Eckel, John E.	Albany
Engel, Edward F.	Seneca Falls
Evans, Alfred S.	Buffalo
Fabricante, Salvatore P.	Brooklyn
Gesualdi, James	Bronx
Gillen, Theodore E.	Cohoes
Gloster, Cecil C.	Brooklyn
Griffith, Newell J.	Tuckahoe
Hill, Donald B.	New York
Horowitz, Sender	Brooklyn
Joslin, Doyle	New York
Kanzer, Mark G.	New York
Kasper, Louis	Jamaica
Kassop, Harry	Forest Hills
Kennedy, Putnam C.	Catskill
Kersten, Gerhard	Forest Hills
Kime, James S.	Buffalo
King, Byron B.	Rochester
Komora, Edward J.	Jackson Heights
Kramer, Leonard	Brooklyn
Krawczyk, Joseph F.	Buffalo
Kristal, Jackson J.	New York
Kwalwasser, Simon	Orangeburg
Lambert, John P.	Katonah
Levine, Hyman J.	Brooklyn
McCoy, Stephen M.	Brooklyn

New York—Continued

Mayer, Robert A.	Richmond Hill
Mayo. Maxim A.	Cohoes
Mehlman, Alexander	Wassaic
Moore, Frederick T.	Utica
Nadell, Raymond	Brooklyn
Parnell, Vincent A.	Middle Village
Persons, Ray E. Jr.	Cairo
Petersen, Walter R.	Buffalo
Polinger, Elliot C.	New York
Ross, George L.	New York
Rowe, Linwood M.	Plattsburg
Sass, Raymond W.	New York
Schantz, Benjamin A.	Middletown
Schettini, Vincent R.	Newburgh
Schneer, Henry I.	Brooklyn
Shelton, Henry Z.	Orangeburg
Silberman, Norman	Brooklyn
Soltz, Samuel E.	New York
Starr, Felix	Brooklyn
Stiles, David	Scarsdale
Stock, Robert	Long Island City
Sweet, Byron L. Jr.	Tarrytown
Tabacco, Salvatore	Albany
Thanos, Daniel	Syracuse
Verdone, George F.	Glendale
Weinstein, Joseph	Brooklyn

Ohio

Anderson, Robert A.	Wooster
Artman, Edwin H.	Chillicothe
Ayres, Roland W.	Alger
Ayres, William B.	Dayton
Bahrenburg, James H.	Canton
Baker, Philip H.	Columbus
Basnett, Carl M.	Columbus
Davis, John W.	Cleveland
Drury, Walter A.	Willard
Ersay, Emil F.	Cleveland
Fox, Wesley B.	Cincinnati
Garber, Pauline E.	Sugarcreek
Hale, Nathan S.	Wilmington
Johnston, G. W. Jr.	New Philadelphia
Keeling, Virgil C.	Mt. Healthy
Kessler, Dale L.	Hamilton
Kyman, Seymour	Cleveland Heights
Lapp, Warren A.	Cincinnati
Makley, Torrence A. Jr.	Dayton
Moffatt, Robert E.	Shelby
Oppenheim, Heinz	Cleveland
Owens, Andrew J.	Youngstown
Riemer, Robert W.	Norwood
Ritchey, Arthur F.	Cincinnati
Schoenberger, James A.	Cleveland Hgts.
Seikel, George R.	Akron
Stahl, Richard H.	Akron
Wagner, Charles A.	Youngstown
Wertheimer, Daniel S.	Cleveland Hgts.
Wilke, Richard M.	Cleveland

Pennsylvania

Aronson, Morton L.	Pittsburgh
Auslander, Milton M.	Lancaster
Ballard, George T.	Pittsburgh
Barnes, Benjamin C.	Ardmore
Battaglia, Albert J.	Philadelphia
Bauer, William A.	Turtle Creek
Bittenbender, Glace E.	Nescopeck
Brown, Arthur E. Jr.	Harrisburg
Cooper, LeRoy G.	Glen Lyon
Crispell, Kenneth R.	Sayre
Dudnick, Henry J.	Philadelphia
Esman, Morris	Pittsburgh
Ferri, Henry G.	Carnegie
Frankel, Kalman	Philadelphia
Gan, Walter S.	Philadelphia
Hale, Thomas K.	Frackville
Heckman, James A.	Wilkinsburg
Ivker, Morris	Philadelphia
Jacobs, Francis	West Chester
Kearney, Martin J.	Philadelphia
Keiserman, Joseph	Philadelphia
Kephart, Stewart B.	Philadelphia
Killius, William J.	Johnstown
King, Cedric S.	Bryn Athyn

Pennsylvania—Continued

Klein, Joseph M.	Wilkes-Barre
Krause, Seymoure	Braddock
Krick, John H.	Export
Levinson, David C.	Harrisburg
Light, John H.	State College
McGovern, William J.	Carnegie
Marks, Meyer A.	Philadelphia
Morrison, Roger W.	Pittsburgh
Null, Robert H.	Philadelphia
Petroff, George N.	Uniontown
Pfromm, John	Allentown
Ross, Joseph G.	Spring City
Ruth, John F.	Wyomissing
Schaffner, Bertram H.	Erie
Silverstein, Donald J.	Scranton
Valigorsky, Paul J.	Six Mile Run

Tennessee

Armstrong, Charles M.	Knoxville
Baird, Jesse P.	Dyersburg
Kennedy, James A.	Nashville
Kimsey, Warren H.	Memphis
Knapp, John A.	Mountain Home
Murrah, William F. Jr.	Memphis
Rozzell, James D.	Gibson
Ryan, Joseph M.	Knoxville
Tandeta, Morris	Memphis

Texas

Anspach, Harold M.	Waco
Austin, Carl M.	Dallas
Barnes, Maurice C.	Waco
Beall, James F.	Nacogdoches
Christian, John J.	Temple
Ellis, John M. Jr.	Mt. Pleasant
Fife, Ray	Dallas
Finney, James W.	Coleman
Gordon, Clarence E.	Eddy
Hatchett, Capres S. Jr.	Amarillo
Irvine, George N. Jr.	McCamey
Jackson, Claude L.	Ranger
McDonald, Donald H.	Abilene
Spark, Milton	Waco
Tanaka, Paul A.	El Paso

Utah

Evans, Carvel S.	Salt Lake City
Finch, Stuart M.	Salt Lake City
Loomis, Walter F.	Salt Lake City
MacFarlane, Alan P.	North Logan

Vermont

Pine, Louis F.	Burlington
Ross, Ivan B.	St. Albans

Washington

Beatty, John H.	Everett
LanGevin, William A.	Yakima
Lindel, Marion C.	Raymond
Lucas, John E.	Seattle
Parmelee. Ernest B.	Seattle
Philips, Clifford W.	Seattle

West Virginia

Cianos, James N.	*Clarksburg*
Escue, Henry M.	St. Albans
Haislip, Charles A.	Valley Grove
Hall, Jack H.	Morgantown
Hutchinson, Bernard M.	Sutton
Kinney, Earl R.	Ida May
Lynch, Richard V. Jr.	Clarksburg
Marlowe, William H.	Sutton
Sanders, Zack W.	Bluefield
Wells, Warner L.	Clarksburg

Wisconsin

Conway, John E.	Spring Valley
Coon, William L.	Milwaukee
Gorenstein, Leonard	Milwaukee
Heilman, Richard B.	Richland Center
Kimber, Karl E.	Waukesha
Kleinhans, Henry M.	Wauwatosa
Nordby, Eugene J.	Baldwin
Wenger, Harold A. E.	Madison

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest such as relate to society activities new hospitals education and public health)

CALIFORNIA

Laboratory of Experimental Oncology.—The establishment of a new cancer research unit by the U S Public Health Service and University of California Medical School, San Francisco was announced December 4 according to the New York *Times* To be known as the Laboratory of Experimental Oncology, the project will be set up at the Laguna Honda Home here and will be jointly conducted by the Medical School and the Public Health Services of the National Cancer Institute Dr Francis S Smyth, dean of the medical school said the research work would be coordinated not only with the cancer program of the University of California Medical School but also with similar work at the Stanford University School of Medicine Dr Michael B Shimkin Bethesda, Md , surgeon attached to the National Cancer Institute who was graduated from the University of California Medical School in 1937, and Comdr Howard R Bierman of the Naval Medical Corps will represent the Public Health Service on the project Commander Bierman is with the Naval Medical Research Institute at the National Naval Medical Center at Bethesda Md Dean Smyth said the research would be carried on through the cooperation of Dr J. C Geiger, director of public health for this city, and Mr Thomas A Brooks chief administrative officer of San Francisco

CONNECTICUT

Conference on Medical Social Work —At the thirty-sixth annual conference of social work in Bridgeport November 14 15, four of the twenty six panel discussions were devoted to medical subjects, as follows Dr Frederick C Redlich assistant professor of psychiatry, Yale University School of Medicine New Haven "Social and Emotional Aspects of Illness", Dr Edward H Truex Jr Hartford Conn 'Rehabilitation of the Aurally Handicapped , Dr A Nowell Creadick New Haven chairman of the Commission to Study the Needs of the Chronically Ill and Aged, 'Care of the Aged , Dr Arthur Bliss Dayton, New Haven 'The Chronically Ill

DISTRICT OF COLUMBIA

New Appointments at Georgetown —Included among the changes in the faculty of Georgetown University of Medicine Washington, are

Dr Charles F Geschickter Baltimore professor and director of the department of pathology
Walter C Hess Ph D Washington professor and director of the department of physiologic chemistry
Dr Lloyd G Lewis, Baltimore, associate professor of urology
Dr Charles P Howze Washington professor of clinical urology

KENTUCKY

Personal —Dr Edward M Thompson Russellville has been appointed acting director of the Lexington-Fayette County Health Department ——Dr Oscar A Brown, Island has been appointed health officer of McLean County ——Dr Jesshill K Love, Herrods Creek has been appointed medical director of the eleven cancer clinics operating in the state according to newspaper reports of a statement of Dr Francis G Aud Louisville, chairman of the state executive committee Kentucky division American Cancer Society

LOUISIANA

Personal —Dr Orville J Richardson Shreveport has been appointed superintendent of the Pineville Charity Hospital succeeding Dr Marion H Foster resigned effective September 1

Research Fund in Gynecology —The B Bernard Weinstein Gynecological Research Fund has been created by patients and friends of Dr Weinstein assistant professor of gynecology Tulane University of Louisiana School of Medicine, New Orleans The interest derived from this fund is to be used for research in gynecology and is available to any member of the staff of Tulane University doing research in the field

Alton Ochsner Wins *Times-Picayune* Loving Cup —Dr E W Alton Ochsner, professor of surgery and director of the department, Tulane University, Louisiana School of Medicine, New Orleans, has been chosen as the 1945 recipient of the *Times-Picayune* Loving Cup Dr Ochsner was awarded the cup for his contribution of local and national scope, both of a medical and civic nature He and his associates are responsible for the establishment in 1943 of the Alton Ochsner Medical Foundation for education, research and charity The *Times Picayune* Loving Cup was established in 1940 Dr Ochsner is the fourth physician to receive the award, the others being Dr Rudolph Matas, New Orleans, in 1941 (The Journal, Nov 22, 1941 page 1797), and the late Drs Arthur W De Roalds in 1905 and Sara T Mayo in 1910

MAINE

Clinical Program in Bangor.—The Maine Medical Association conducted a clinical session in Bangor, December 1-2 under the auspices of the Penobscot Medical Association Clinics were held at the Eastern Maine General Hospital Bangor, Bangor Sanatorium and Bangor State Hospital The speakers at a dinner session were Dr Richard B Cattell, Lahey Clinic, Boston, "Surgery of the Intestine," and Dr Chester S Keefer, Evans Memorial Hospital Boston, "Use of Antibiotics in Medicine"

MASSACHUSETTS

Changes in Faculty.—Included among recent appointments to Harvard Medical School, Boston, are Dr Maxwell Bovarnick, Wilton, Conn , assistant professor of bacteriology and immunology, Dr Seymour J Gray, Chicago assistant professor of medicine and Dr DeWitt Stetten Jr , New York assistant professor of medicine

MINNESOTA

The Rigler Lectureship —Dr Nils Westermark of the University of Stockholm, Sweden gave the Leo G Rigler Lectureship at the University of Minnesota Medical School Minneapolis November 26 His subject was 'New Experimental Studies on Pulmonary Circulation"

Personal —Members of the Slayton Civic and Commerce Association held a dinner in honor of Dr Leon A Williams Slayton on November 15 in recognition of his completion of fifty years in the practice of medicine in Slayton and Murray counties Dr Williams was presented with a pen and pencil set ——Dr Thomas H Shastid observed his eightieth birthday in Duluth recently

MISSISSIPPI

Advisory Council for Hospital Care —A state advisory council has been created by the Mississippi Commission on Hospital Care The council membership is made up of thirty-five citizens representing their various professions and interests throughout the state It will consult with and advise the commission in determining the hospital needs of the state

NEW YORK

Director of State Tuberculosis Hospitals —Dr Ralph Horton superintendent of the Homer Folks State Tuberculosis Hospital, Oneonta, since 1934, has been appointed general director of tuberculosis hospitals, division of tuberculosis New York State Department of Health

New York City

Proposed City Health Council.—The organization of a 'Health Council of Greater New York' is now being developed to serve as a joint planning board through which the existing health organizations can work out their programs in relation to and in cooperation with, each other, and with citizen groups The officers are Mr E Roland Harriman, president, and Mrs Shepard Krech, secretary

Faculty Changes at Long Island —Included among recent changes in the faculty at Long Island University College of Medicine are

Dr Charles A Gordan Brooklyn appointed director of the department of obstetrics and gynecology succeeding Dr Alfred C Beck
Dr Morris Glass, Brooklyn, Dr Frank P Light Brooklyn Dr William Meagher, Brooklyn, Dr J Thornton Wallace Jackson Heights and Dr George Hamilton New York appointed clinical professors in the department of obstetrics and gynecology
Dr Robert I Moorhead retired as executive head of the department of otolaryngology with the rank of emeritus professor of otolaryngology
Dr Stuart A Winning, Brooklyn, appointed assistant clinical professor of surgery
Dr William Dock Brooklyn appointed director of medicine on the College Division at Kings County Hospital

Dr. George H. Lordi, Brooklyn, Dr. John B. D'Albora, Brooklyn, and Dr. Morris M. Banowitch, Brooklyn, appointed clinical professors in the department of medicine.
Dr. S. Charles Franco, Brooklyn, appointed assistant clinical professor in the department of medicine.
Drs. John Pepe, Brooklyn, and Leo A. Harrington, Brooklyn, appointed assistant clinical professors in the department of radiology.
Dr. Thurman B. Givan, Brooklyn, appointed professor of clinical pediatrics.
Dr. Emil Smith, Brooklyn, appointed assistant clinical professor of pediatrics.

OHIO

New County Publication.—The Journal of the Clark County Medical Society recently made its appearance, with Dr. Howard H. Ingling, 308 East High Street, Springfield, as chairman of the publication committee. Other members, all of Springfield, are Dr. Ray M. Turner, Dr. William P. Ultes and Dr. George M. Lane. Mr. Frank C. Bateman, 304 East Columbia Avenue, Springfield, is the business manager.

The Lower Lecture.—The William E. Lower Lecture was presented November 15 by Dr. Cornelius P. Rhoads, New York, on "Recent Advances in the Treatment of Cancer." The lecture was the ninth in a series sponsored by the Academy of Medicine of Cleveland at the Cuyahoga County Medical Society. The series was made possible by a grant of money given by Dr. William E. Lower to endow a lectureship in medicine.

Memorial to Dr. Moore.—A portrait of the late Dr. Edgar H. Moore, presented to the board of trustees of the Columbus Public Library, will be displayed in that building as a permanent memorial to a brilliant young physician whose death brought about the library's acquisition of a trust fund for medical books. Dr. Moore, who died in 1904 at the age of 28, was stricken after five years of practice. His mother, who died May 20, 1935, left her estate to the city of Columbus to the library for the purchase of literature relating to incurable diseases as the Dr. Edgar Howard Moore Foundation. The estate has been invested by the city, and the income will always be available for the original purpose.

Personal.—Dr. Archelaus D. Harvey, Lebanon, has been appointed for a two year term as health commissioner of Warren County.——Dr. Forder F. DeMuth, Hicksville, has resigned as Defiance County health commissioner.——Emil Bozler, Ph.D., has been promoted to professor of physiology at the Ohio State University College of Medicine, Columbus. ——John A. Louis, Columbus, has been appointed executive secretary of the Ohio Tuberculosis and Health Association, succeeding Robert G. Paterson, Ph.D., who has retired after holding the position for thirty-five years. Dr. Paterson, who has been given the title of executive secretary emeritus and as director of research, will write a text in Community Health Organization for the School of Social Administration, Ohio State University, a history of the tuberculosis movement in Ohio and a history of the public health movement in Ohio.—— Dr. Warren L. Hogue Jr. has been appointed medical department head for Firestone Tire and Rubber Company, Akron, to succeed Dr. Dan Moore McDonald, who retired on September 1 after forty years of medical service with the company. ——Enrique E. Ecker, Ph.D., professor of immunology, Western Reserve University School of Medicine, Cleveland, has been made a member of the Royal Academy of Medicine of Spain. Dr. Ecker has been lecturing in various cities abroad.

PENNSYLVANIA

New Director of Tuberculosis Control.—Dr. Morrison C. Stayer, Carlisle, who retired from the Army with the rank of major general, has been appointed director of the Bureau of Tuberculosis Control in the State Department of Health. Dr. Stayer will succeed Dr. Dale C. Stahle, Harrisburg, who has been acting director of the bureau since February and who has resigned to enter private practice.

TENNESSEE

Exposé of Naturopathic Diploma Mills.—Creation of a permanent investigating committee of all healing arts in Tennessee will be advocated by the American Naturopathic Association of Tennessee when the legislature convenes next month, the Nashville *Banner* reported December 9. The legislature will be urged to "put teeth" in the basic science law "in order to rid the profession of undesirables." It was stated that the action is prompted by the discovery that many persons licensed to practice naturopathy in Tennessee were not qualified, and some had obtained licenses without taking an examination, but actually it followed an entire exposé of the illegal practices of the board of naturopathic examiners by the state, stemming from the activities of the Memphis *Commercial-Appeal.* Several naturopaths have been arrested and are under heavy bonds pending trial. Another naturopathic group is the Tennessee Association of Naturopathic Physicians, Inc., which was formed in October 1945 "to combat unscrupulous and illegal practices thought to be destroying the standing of naturopathic physicians practicing in accordance with the naturopathic bill. . . ." The entire investigation is being carried on by the state, and some indictments have already been made. One attorney for the state is reported to have said that "an allegedly phony naturopathic and homeopathic racket of international scope" had been smashed in Tennessee with the cooperation of the *Commercial-Appeal.* Investigators said that a medical doctor, whose name was not divulged, assisted in the investigation after one naturopath made an offer to obtain a "genuine homeopathic license for practice in the state of Arkansas." The doctor sent a check for $150 through one William Faulkner, it was stated, $50 of which was to pay for the license. The investigation by the state has disclosed the illegal practices of the state board of naturopathic examiners, specific members of which have been accused of operating scores of diploma mills throughout the state and elsewhere in the United States and Canada.

TEXAS

Spring Clinical Conference.—The sixteenth annual Spring Clinical Conference of the *Dallas Southern Clinical Society* will be held in Dallas, March 17-20. Participating in the conference will be:

Dr. Elmer Belt, Los Angeles, Urology.
Dr. William Boyd, London, Pathology.
Dr. Frank D. Dickson, Kansas City, Mo., Orthopedic Surgery.
Dr. Francis Fralick, Ann Arbor, Ophthalmology.
Dr. Leo H. Garland, San Francisco, Radiology.
Dr. George H. Humphreys II, New York, Surgery.
Dr. John R. Lindsay, Chicago, Otolaryngology.
Dr. Perrin H. Long, Baltimore, Preventive Medicine.
Dr. Henry G. Poncher, Chicago, Pediatrics.
Dr. Isidor S. Ravdin, Philadelphia, Surgery.
Dr. Ralph A. Reis, Chicago, Obstetrics and Gynecology.
Dr. Newton D. Smith, Rochester, Minn., Proctology.
Dr. Willard O. Thompson, Chicago, Medicine.
Dr. John C. Whitehorn, Baltimore, Neuropsychiatry.
Dr. Julius L. Wilson, New Orleans, Medicine.

VIRGINIA

Changes in Health Personnel.—Dr. James Dudley, health commissioner of Newport News, has resigned to accept a similar position with the city of Roanoke, effective September 1.—— Dr. Henry C. Bradford, Falls Church, has been appointed health officer of Fairfax County, with headquarters in Fairfax, effective November 1.——Dr. James A. Fields has been appointed health officer of Pittsylvania and Halifax counties, with headquarters in South Boston, effective November 15. ——Dr. B. Randolph Allen, director of the bureau of communicable diseases, Virginia State Department of Health, has resigned to join the Veterans Administration.——Dr. William A. Browne, assistant director, Richmond department of health, has resigned, effective December 1.

WASHINGTON

Personal.—Dr. Park W. Willis Sr. has been named president of the Pioneer Association of Washington State. Dr. Willis has practiced in Seattle since 1892.——Dr. James A. Durrant, who had practiced in Snohomish for more than forty-four years and who served three years as state representative, has retired.——Dr. Herbert E. Tomlinson, Washington, D. C., recently released from military service, has been appointed industrial consultant for the industrial and adult hygiene section of the Washington State Department of Health.——Dr. Burton A. Foote, Ellensburg, has been temporarily appointed health officer of Kittitas County, succeeding Dr. Conrad E. Rosdahl, Spokane, resigned.——Dr. Bayard T. Blake was recently presented with $1,300 from the community of Darrington, where he had been practicing for forty years, to enable him to attend the recent world series.——Dr. Charles E. Reddick, Paducah, Ky., has been named health officer of Pierce County, succeeding Dr. Harold Marks, Washington, D. C., who has joined the staff of Pierce County Medical Bureau.——Dr. Sherman S. Pinto has been appointed medical director of the Tacoma Smelter of the American Smelting and Refining Company. Dr. Pinto, before he entered military service, was in charge of the division of industrial hygiene of the Louisiana State Board of Health, New Orleans.

WEST VIRGINIA

Dr. Spray Retires.—Robb S. Spray, Ph.D., has retired as professor of bacteriology at West Virginia University School of Medicine, Morgantown, with the rank of professor emeritus. Dr. Spray held the position for twenty-five years.

WISCONSIN

University News.—Dr Clarence Knight Aldrich, formerly of Winnetka Ill, recently of the U S Public Health Service, has been appointed assistant professor of neuropsychiatry in the department of student health at the University of Wisconsin Medical School, Madison

GENERAL

Questionnaire on Private Practicing Psychiatrists.—The Maryland Association of Private Practicing Psychiatrists is sending out a questionnaire to obtain information on the need of a central body for discussing and solving problems incident to the office practitioner The Maryland association was formed some two years ago and the feeling for a central organization stems from this group Dr Jean N Cushing is secretary of the Maryland Association of Private Practicing Psychiatrists, 11 East Chase Street, Baltimore 2

Nobel Prize Winners Honored.—Portraits of five American scientists who were awarded Nobel prizes in 1946 and selections from their scientific writings are being displayed in the Library of Congress from November 19 through December 31 The five scientists honored in the exhibit are.

Professor Percy W Bridgman Harvard University, awarded a Nobel prize in Physics for work on high pressure.

Dr J H Northrop Rockefeller Institute awarded a Nobel prize in chemistry for work on the chemistry of enzymes and viruses,

Professor H J Muller, Indiana University awarded a Nobel prize in medicine and physiology for work on the effect of roentgen rays on genes and chromosomes

Dr Wendell M Stanley, Rockefeller Institute, awarded a Nobel prize in chemistry for work on the chemistry of viruses and

Professor James B Sumner, Cornell University awarded a Nobel prize in chemistry for work on enzyme chemistry

Meeting on Antibiotics.—Hans T Clarke, D Sc chairman of the antibiotics study section of the National Institute of Health a group of civilian consultants organized for the purpose of promoting research investigations in the field of antibiotics, announces that the Study Section's next meeting will be held in Washington, D C, on Jan 31 and Feb 1, 1947, in conjunction with the commercial producers of the various antibiotics and with others interested in antibiotic research. Although it is not possible to defray travel expenses, all interested investigators in the field of antibiotics are invited to attend this two day national conference Inquiries concerning details of this meeting and the presentation of scientific reports should be addressed to Gordon Seger, Ph D, Executive Assistant, Antibiotics Study Section, National Institute of Health, Bethesda 14, Md

New Grants of Nutrition Foundation.—On November 14 the Nutrition Foundation approved renewals of grants amounting to $29,050 and eight new grants totaling $28,800 The Nutrition Foundation, Mr George A Sloan, president, reported, has made thirty-three grants totaling $1,267,305 to fifty-three universities and medical centers in the United States and Canada The work of the foundation has been supported by contributions totaling $2,318,000 made by food and related manufacturers The new grants made by the Board of Trustees include

Olaf Bergeim, Ph D, University of Illinois College of Medicine Chicago, $3,000 to study ten or more individual amino acids in human and animal blood tissues sweat and spinal fluid in health and disease

Paul D Boyer, University of Minnesota School of Medicine, Minneapolis $2 600 to study the mechanism of the action of vitamin E and especially the relationship between deficiencies and impaired functions of the muscles Preliminary findings have shown striking effects of chronic deficiencies causing heart failure in larger animals

Ralph I Dorfman Ph D, Cleveland, Joseph T Wearn, Western Reserve University, $3 400 to study the nature of relationships between vitamins and hormones

Carl M Lyman Ph D, Oakland Texas A & M College of Texas $2 000 annually for two years to study the steps by which amino acids are synthesized by living organisms

Joseph H Roe, Ph D, George Washington University School of Medicine, Washington D C, $3 600 to study methods for making an analytic distinction between two or possibly more of the oxidation products of vitamin C

Edward L Tatum, Ph D Yale University School of Medicine, New Haven, Conn, $2 500 annually for two years to study new technics of inducing new strains of bacteria, molds and so on by means of chemical irritants

Wilfred W Westerfeld Ph D, Syracuse University College of Medicine, $3,000 annually for two years to study the changes undergone by sugars in the animal body and the relation of such changes to the functional role of certain vitamins in the B complex

James G Wilson, Ph D, New York University of Rochester, $1 200 to study and analyze the malformations produced in fetal and newborn rats by maintaining the mothers on a diet deficient in vitamin A

Narcotic Violations.—The Bureau of Narcotics U S Treasury Department, Washington D C recently reported the following

Dr Charles F Abney, Knoxville, Tenn pleaded guilty in the U S District Court at Knoxville, May 29, to violation of the Harrison Narcotic Law and was sentenced June 5 to serve eighteen months in the penitentiary The sentence was to be served consecutively on counts one and two; sentence was suspended on count three, he was placed on probation for five years and fined $100 on count four

Dr Wayne D Daugherty, Grove City, Pa, pleaded guilty in the U S District Court of Pittsburgh to violation of the Harrison Narcotic Law Sentence was suspended, and he was placed on probation for five years, ordered to pay costs and to voluntarily enter the U S Public Health Service Hospital, Lexington, Ky, for the treatment of narcotic addiction

LATIN AMERICA

Health Activities in Latin America.—*The Pan American Doctors' Club.*—The Pan American Doctors' Club was incorporated in August in Mexico as a nonprofit association and has taken over the club home at San Miguel Regla, 70 miles northeast of Mexico City Membership in the club is by invitation Its chief aims are to achieve a closer understanding between the physicians of the Americas and to facilitate in every way possible a solution of the health and general welfare problems of the peoples of the Western Hemisphere as well as to use the club home as a vacation spot for its members It is planned to have members drawn mainly from the medical profession, but with the inclusion of 35 per cent of cultured people from other walks of life, such as educators, dentists, clergymen and engineers, to whom the purposes and opportunities for pleasant association at the club might appeal As far as possible, membership will be kept evenly divided between Latin-American countries and those north of the Rio Grande Plans are under way to create a model dairy farm Two medical student graduates are now stationed at the club to begin the cleanup and sanitation of the neighborhood The work is being carried out under the direction of Dr Miguel Bustamante, subdirector, Institute for Tropical Diseases Mexico, D F Request for reservations or information should be addressed to San Miguel Regla, box 6, Real del Monte, Hidalgo, Mexico, or to Dr Clarence A Mills, secretary-treasurer of the club, Cincinnati General Hospital Cincinnati

Campaign Against Tuberculosis.—Dr. Rubin M Lewis, Philadelphia, is in Guayaquil, Ecuador, to direct a campaign against tuberculosis under the auspices of the Ecuadorian Anti-Tuberculosis League sponsored by the Ecuadorian government. The Philadelphia *Record*, September 22, stated that Dr Lewis would organize three tuberculosis hospitals, two in Guayaquil and one in Quito

New Latin American Society.—The Sociedad Argentina de Patologia Infecciosa y Epidemiologia was recently organized, with headquarters in Buenos Aires, to advance the knowledge and measures for the prevention and control of infectious diseases and to intensify cultural and intellectual relations and scientific interchange with national and foreign societies pursuing similar aims Officers elected include Dr Julio Mendez, president, Dr. Carlos Fonso Gandolfo, vice president, and Dr Julio Hansen, general secretary

CORRECTION

Brutalities of Nazi Physicians.—The editorial in The Journal November 23, page 714, mentions as one of the three scientists indicted in Nuremberg a Dr Sigmund Schilling A correspondent writes that the daily press has reported Dr Klaus Schilling as having been responsible for the brutalities performed by German physicians under the Nazi regime, and that as far as he knows, a Dr Sigmund Schilling was not known as a scientist in Germany in 1933

Marriages

Albert C England Jr to Miss Priscilla Stern, both of Boston, in Marblehead, Mass, September 15

William Davis Vail, Hyannis, Mass, to Dr Adele Olney Stevens of Short Hills, N J, September 21

Herbert Matsner Gruenberg to Miss Elaine Kathryn Rosness, both of Los Angeles, October 12

William N Eddy, Boonville, N Y, to Miss Katherine Elmore in Blackstone, Va, September 7

Joseph R Fox, Philadelphia, to Miss Jane Jarrett of Quakertown, Pa, September 8

Orrin E Anderson to Miss Margaret Harper, both of New York, October 12

Deaths

James Murray Flynn ⊕ Rochester, N. Y.; University of Buffalo School of Medicine, 1914; member of the House of Delegates of the American Medical Association from 1938 to 1941 and from 1943 to 1946; consultant in radiology at the University of Rochester School of Medicine and Dentistry; specialist certified by the American Board of Radiology; fellow of the American College of Physicians; past president of the Medical Society of the State of New York and the Medical Society of the County of Monroe; member of the American Roentgen Ray Society, Radiological Society of North America, American College of Radiology and the American Radium Society; served in the U. S. Army with the American Expeditionary Forces during World War I; affiliated with Strong Memorial Hospital, Monroe County Infirmary, Park Avenue and St. Mary's hospitals; died December 14, aged 63, of coronary disease and pneumonia.

Victor Darwin Lespinasse ⊕ Chicago; born in Aurora, Ill., Dec. 2, 1878; Northwestern University Medical School, Chicago, 1901; interned at Cook County Hospital; associate professor of urology at his alma mater; specialist certified by the American Board of Urology; member of the American Urological Association; fellow of the American College of Surgeons; past president of the Englewood Branch of the Chicago Medical Society; past president of the Chicago Urological Society; in 1910 the American Medical Association awarded him a Certificate of Honor for method of blood vessel anastomosis, in 1917 the Silver Medal for exhibit on obstructive sterility and in 1920 the Certificate of Merit for experiments on spermatogenesis and sterility; affiliated with the Wesley Memorial Hospital, where he died December 14, aged 68, of coronary thrombosis.

Joseph Krafka Jr., Augusta, Ga.; University of Georgia School of Medicine, Augusta, 1933; born in Ottumwa, Iowa, Aug. 14, 1890; professor and head of the department of zoology at the University of Georgia in Athens from 1919 to 1926 when he became professor and head of the department of microscopic anatomy at his alma mater; instrumental in the founding of the Georgia Academy of Science; member of the American Society of Zoologists, the Entomological Society of America, the American Association of Anatomists and the Sigmi Xi honorary science fraternity; contributor of a series of papers dealing with the medical history of Georgia, arteriosclerosis and human embryology; author of "Human Embryology" and a "Textbook of Histology"; died in the University Hospital November 5, aged 56, of nephritis.

Louis Samuels Deitchman, Youngstown, Ohio; University of Pennsylvania School of Medicine, Philadelphia, 1921; member of the American Medical Association and the American Academy of Ophthalmology and Oto-Laryngology; served as treasurer for the Mahoning County Medical Society; specialist certified by the American Board of Otolaryngology; interned at the Youngstown Hospital Association, where he was a member of the staff; affiliated with the Mahoning Tuberculosis Sanatorium; began active duty as a major in the medical corps, Army of the United States, in August 1942 and was separated from the service with the rank of lieutenant colonel in April 1946; died September 4, aged 52, of coronary occlusion.

Charles H. Boissevain ⊕ Broadmoor, Colo.; Universiteit van Amsterdam Geneeskunde Faculteit, Netherlands, 1918; for many years affiliated with the Tuberculosis Research Laboratory of the Colorado College in Colorado Springs; began active duty as a captain in the medical corps, Army of the United States, in August 1943 and was released from active duty with rank of major in April 1946; died October 18, aged 53, of adenocarcinoma of the colon.

Alvers T. Botts, Decatur, Ill.; Keokuk (Ia.) Medical College, 1897; died September 17, aged 86, of cerebral thrombosis.

Alma Josephine Chapman, York, Neb.; Omaha Medical College, 1897; for many years superintendent of the State Reformatory for Women; died September 7, aged 74, of carcinoma of the breast.

Elliott DeJarnette, Ashland, Va.; University of Virginia Department of Medicine, Charlottesville, 1897; died October 21, aged 73, of heart disease.

Mary Wade Griscom, Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1891; served on the staffs of the Woman's Hospital and the West Philadelphia Hospital for Women and Children; spent many years in China; died November 5, aged 80, of endocarditis.

Thomas James Lamping, Neenah, Wis.; Rush Medical College, Chicago, 1901; member of the Illinois State Medical Society and the American Medical Association; served during World War I; formerly on the staff of the Norwegian American Hospital in Chicago; died October 22, aged 69.

A. S. McCleary, Excelsior Springs, Mo.; Eclectic Medical University, Kansas City, 1904; died October 21, aged 81.

Arthur Bancroft McKinney, Washington, D. C.; Howard University College of Medicine, Washington, 1914; died October 18, aged 58.

George Morris Malkin, Alhambra, Calif.; Louisville (Ky.) Medical College, 1905; for many years affiliated with the county health department; served in the U. S. Naval Reserve during World War I; died September 5, aged 63, of cerebral hemorrhage.

Fred Garrison Markle, Pleasantville, N. Y.; Albany (N. Y.) Medical College, 1897; died in the Northern Westchester Hospital, Mount Kisco, October 9, aged 75.

John Luther Maroon ⊕ Santa Ana, Calif.; Vanderbilt University School of Medicine, Nashville, 1912; formerly assistant professor of medicine at the College of Medical Evangelists, Los Angeles; died October 8, aged 72.

Willard Leon Michelson ⊕ Springfield, Ill.; Northwestern University Medical School, Chicago, 1940; interned and served a residency at the Cook County Hospital in Chicago; served a residency at the Illinois Eye and Ear Infirmary in Chicago; died October 16, aged 31.

Benjamin Joshua Millard, Mount Carmel, Pa.; Jefferson Medical College of Philadelphia, 1892; died October 3, aged 76, of myocarditis.

Fred Lee Ogilvie, Caruthersville, Mo.; St. Louis University School of Medicine, 1906; member of the American Medical Association; for many years health officer of Pemiscot County; for one term represented Scott County in the state legislature while a resident of Blodgett, where he was member and president of the school board; served during World War I; died in the Southeast Missouri Hospital, Cape Girardeau, October 14, aged 68, of cerebral hemorrhage.

Monroe Pennington, Mount Vernon, Ky.; Louisville Medical College, 1898; member of the American Medical Association; president of the Bank of Mount Vernon; local surgeon for the Louisville and Nashville Railroad Company; died September 27, aged 74, of cerebral hemorrhage.

Ural Albert Vest Presnell ⊕ Kennett, Mo.; Barnes Medical College, St. Louis, 1904; served during World War I; part owner and medical superintendent of the Presnell Hospital; died October 3, aged 66.

Jesse Burt Sampsell ⊕ Van Wert, Ohio; Ohio Medical University, Columbus, 1903; served as city health officer, as examining physician for the induction center and as a member of the staff of the Miami Hospital in Dayton; died September 21, aged 70, of coronary thrombosis.

John Shaffer Simms, Hollywood, Calif.; Rush Medical College, Chicago, 1911; also a graduate in pharmacy; diplomate of the National Board of Medical Examiners; member of the American Medical Association; served overseas during World War I; past president of the Chamber of Commerce in Bellflower, where he was president of the Rotary Club; served on the staff of the Artesia (Calif.) Hospital; died in the Hollywood-Presbyterian Hospital September 6, aged 63, of arteriosclerosis and coronary occlusion.

Nathaniel Brown Stanton ⊕ Plainfield, N. J.; Cornell University Medical College, New York, 1920; fellow of the American College of Surgeons; chief of the emergency medical service of the Plainfield Defense Council during World War II; senior attending surgeon, Muhlenberg Hospital, where he died October 17, aged 53, of cerebral hemorrhage.

William Cowell Stephenson Jr. ⊕ Roanoke, Va.; University of Virginia Department of Medicine, Charlottesville, 1929; served during World War II; affiliated with the Roanoke Hospital; died October 2, aged 45.

Ford H. Swetnam, Fairfax, Va.; Georgetown University School of Medicine, Washington, D. C., 1907; Fairfax county medical examiner; at one time mayor of Vienna; member of the board of the National Bank of Fairfax; died in September, aged 62.

Sydney Peyster Waud ⊕ Chicago; Northwestern University Medical School, Chicago, 1936; served as a colonel in the medical corps, Army of the United States, during World War II; interned at the Presbyterian Hospital; clinical assistant in medicine at his alma mater; on the staff of the Passavant Memorial Hospital; died October 18, aged 37.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 23, 1946.

Progress in Rehabilitation

The rehabilitation of those disabled in the war has received great attention from the government. For this purpose an interdepartmental committee has been formed of representatives of the Ministries of Education, Labor, National Insurance, Pensions and Health. The purpose of the committee is to coordinate the work of the departments responsible for rehabilitation and resettlement and to secure some general supervision over its development and administration. Great progress has been made in the hospitals, the number with all facilities having increased from 48 in 1943 to 204 this year. Measures for dealing with cardiac cases, tuberculosis, deafness, psychoneuroses and the rehabilitation of miners have been taken. Cases of psychiatric disorders have been found the most difficult to handle, and steps are being taken to set up experimental centers.

Modern methods of treatment and rehabilitation at the Ministry of Pensions Hospital have shown that most of the disabled paraplegics can undertake remunerative employment under suitable conditions. The committee was advised that before attempting to set up a special employment scheme for this type of disablement further experience was needed. At two hostels, each accommodating 50 to 70 persons, a plan in which the Ministry of Labor cooperating with regard to training and employment is being tried out.

Since September, 1945 a register of disabled persons has been maintained at all local offices of the Ministry of Labor. On August 19 last there were 628,638 persons on the register. Registration is a condition of eligibility for the employment schemes under the Disabled Persons Employment Act, which makes it obligatory on employers to employ a certain proportion of disabled persons. At present employers of 20 or more persons must employ 3 per cent of disabled persons, and the possibility of increasing this percentage is kept in mind. For the employment and training needs of those unlikely to get employment under ordinary conditions the Minister has set up the Disabled Persons Employment Corporation, which has a program of 50 factories known as "Reemploy Factories." Since April the Ministry of Labor has assumed responsibility for the training of the adult blind.

The End of the White Loaf of Bread

Speaking to the members of the Food Education Society, Sir Jack Drummond, biochemist and official adviser to the Ministry of Food, said that the white loaf had gone, never to return. The present flour extraction rate was a compromise between the highest possible nutritive value and the demands of popular taste. Dark flour was associated with the hardships of war, and the complaints of consumers were mainly psychologic. In June 1940, when the Ministry of Food announced that calcium would be added to flour, hundreds of people complained that the bread was difficult to digest. Many said that the new mixture aggravated arthritis. But in point of fact calcium had not been added at the time of the announcement, because none was available. When it was introduced many months later, without publicity, there was no popular reaction.

Before the war there were no scientific data to show the best level of flour extraction. Government research workers, however, dissected the wheat berry under the microscope and found that the scutellum and outer envelope had high vitamin B and iron content. Milling processes were revised and it was eventually decided that a flour extraction rate of 85 per cent, with its low bran content, had the best nutritive value. It is noteworthy that this abolition of the white loaf is one good result of the great war. It was not brought about because of the dietetic deficiency of the white loaf but because of the need, under the stress of war, to extract more flour from wheat in order to increase the food supply. The task of helping to feed countries impoverished by the war caused the extraction rate of flour to be raised to 90 per cent, but it has now gone back to 85 per cent, while bread rationing continues. The object of returning to 85 per cent is to increase the supply of animal feeding stuffs, so as to help to maintain the winter supply of milk. The prewar extraction rate responsible for the white loaf was 73 per cent. The material extracted from the wheat berry is used by manufacturers of vitamins to produce their expensive and widely advertised articles. Thus the public has the opportunity to recover the removed vitamins at considerable expense!

BRAZIL

(From Our Regular Correspondent)

Rio de Janeiro, Oct. 10, 1946.

Hematologic Data of Normal Adult Dog

It seems useful to record, for the sake of comparison with American figures, the results published by Dr. W. O. Cruz, Dr. E. M. da Silva and Dr. R. Pimenta de Mello of the hematologic data of the normal adult dog of Brazil. The authors are members of the division of hematology of the Oswaldo Cruz Institute of Rio de Janeiro, where all the investigations have been performed with the utmost care. For the various determinations, the latest standard technics of the American laboratories have been used. The authors performed the hematologic tests on 135 mongrel adult dogs, 100 males and 35 females. In the results of all the tests statistical significant difference between the two sexes has not been found, which is in accordance with the data of the American dog. The results for the two sexes as a whole and the respective standard errors are as follows: erythrocytes (millions per cubic millimeter) 5.7 ± 0.06; hemoglobin (grams per hundred cubic centimeters) 12.60 ± 0.13; hematocrit (per cent) 42 ± 0.49; volume index or mean corpuscular volume (cubic microns) 74 ± 0.34; hemoglobin index or mean corpuscular hemoglobin (micrograms) 22 ± 0.10; saturation index or mean corpuscular hemoglobin concentration (per cent) 30 ± 0.16. In 42 dogs the blood volume was determined by the dye method, which permitted several important ratios to be figured out. The ratio total blood/body weight was 10.3 per cent ± 3.3, the ratio hemoglobin/body weight was 10.7 per cent ± 3.2 and the ratio plasma volume/body weight was 5.9 per cent ± 1.8. Other tests have been performed on 100 dogs: diameter by Bock's erythrocytometer was 6.9 ± 0.9 micron; the percentage of reticulocytes varied between 0.1 and 1.5; the platelet volume determined by the thrombocytocrit method was 0.80 ± 0.30 per cubic centimeter; the leukocyte count was 12,200 ± 7,800.

First Report of Newcastle-Boyd-88 Bacillus in Brazil

Dr. Vera Leite Ribeiro of the Instituto Nacional de Puericultura has published a report about 3 cases of bacillary dysentery from which she was able to isolate Shigella paradysenteriae of the Newcastle-Boyd-88 strain for the first time in Brazil. Many cases of acute dysentery caused by this strain of Shigella have been reported in the United States and in Europe, but only in 1940 was it registered in connection with cases of the disease in South America, by Mormaeche in Uruguay. Since then it has been disclosed that 5.5 per cent of the Shigellae from cases of dysentery in Montevideo are classified in this group. The Shigellae from 1 of Dr. Ribeiro's cases presented a biochemical behavior identical with that described by Clayton and Warren; the other two belonged to the Boyd-88 type. All 3 patients were children a few years of age.

Correspondence

BRUTALITIES OF NAZI PHYSICIANS

To the Editor:—The editorial "The Brutalities of Nazi Physicians" in the November 23 issue of The Journal directs attention to one of the most important aspects of the medical interrogations in Germany following the war. As Dr. Ivy found, there was indeed no excess of which some Nazi physicians were not guilty. It was a sickening and disturbing experience to enter such camps as Dachau shortly after they were captured and talk to the men who participated in these crimes. Their repeated defense was that these experiments were all done in the name of science. Dr. Klaus Schilling, the malariologist at Dachau, who was hanged for his part in this work in May 1946, said "What is it if a few people die, if by my work I can save the lives of thousands."

The general scope of these crimes has been amply covered in the editorial, but I question one conclusion which this editorial draws. I speak of the statement that the most serious aspect of the Nazi war crime is the failure of the German medical organizations and societies to express their disapproval or do anything to stop them.

My interrogations of hundreds of German physicians failed to reveal any evidence that they were aware of what was going on in the name of medical science in the concentration camps or that, being aware, they had any power to exercise even such a faint gesture as the voicing of disapproval.

To condemn the German medical profession as a body for failure to act against the avowed policy of the leaders of National Socialism or against some of their colleagues who willingly followed their political leaders in these crimes is to assume that the German organizations had both knowledge of the activities and the power to do something about it. Some information concerning the experiments being done in the concentration camps was released in a medical meeting in Nuremberg in October 1942. Other information seeped out from time to time, but the grumbling reception which these revelations was accorded led the concentration camp physicians to assume an air of secrecy in their activities. Furthermore, it was considered unhealthy to be at all curious about what went on behind the barbed wire of the Nazi concentration camps. German civilians before the war shunned any talk and turned away from seeking any information as to what went on in these places. One was better off not to know.

Physicians in this country without any appreciation of what it means to live under the all seeing eye of a secret police have righteously declared that had they been in Germany, they certainly would have done something about it. And yet it is to be wondered what they might have done had they known that to have spoken out might have meant that their son in the army would be reported "shot by accident" or that their daughter might disappear only to turn up in a brothel or that they themselves might be called on in the dark of the night by the Gestapo. When Heinrich Himmler, the head of the secret police, declared that he regarded any one who disapproved of these concentration camp experiments as traitors to the Nazi nation, that was sufficient warning to the German medical profession to keep quiet.

No medical group, regardless of how high its ideals, can withstand the impact of the constant propaganda and the threat of violence that is the major characteristic of the police state. Careful consideration should be given to this major political factor when the Association takes its stand on these heinous medical crimes.

Cortez F. Enloe Jr., M.D.,
12 East 41st Street,
New York 17.

To the Editor:—In the editorial "The Brutalities of Nazi Physicians" (The Journal, November 23) reference is made to a Dr. Sigmund Schilling as the most prominent of the brutal experimenters, whose name has been associated with study on the blood.

I wonder if many of your readers will not confuse this person with Dr. Victor Schilling, formerly chief of the First Medical Clinic at the Charité in Berlin. It is to be hoped not only that the guilty will be punished but also that there should be no confusion of identities when such grave crimes as these are being judged.

Robert W. Buck, M.D., Boston.

THE TEACHING OF ALLERGY

To the Editor:—More and more it is recognized with advances in medical knowledge and consequent specialization that additional opportunities must be provided for postgraduate medical education. This need has been especially felt with the release of many physicians from the armed services. Allergy is one specialty in which provision for a broad comprehensive training has been severely limited. At the 1944 meeting of the American Academy of Allergy, Dr. David P. Barr discussed this limitation (The Relationship of Allergy to Medicine, *J. Allergy* **16:**61 [March] 1945). Dr. Barr stated that a total of only thirteen residencies and fellowships were available for training allergists throughout the whole country. He recommended that the training of allergists should be along broad lines in immunology, biochemistry, pediatrics, dermatology and rhinology as well as in allergy. Such a program, he thought, would require about two years of full time training.

A program which has been under way since January 1946 and meets all the requirements set down by Dr. Barr is described in the *Journal of Allergy* **17:**324 (Sept.) 1946.

In the clinical fields, lectures and ward rounds are given throughout the year in internal medicine. Lectures and clinics are given in pediatrics, dermatology, rhinology, ophthalmology, dietetics and psychiatry as related to allergy. The nonclinical subjects in the phases related to allergy are taught by specialists in immunology (lectures and laboratory), botany (lectures, laboratory and field trips), immunochemistry, physiology and pharmacology.

Four research fellowships have been established. The registration in the course is limited to ten physicians. After completion of the first year, those who are interested in research and desire to continue in attendance may do so and register for an advanced degree in the Graduate School.

The value in a medical school of cutting across departmental lines to make use of men trained in related clinical and nonclinical fields is demonstrated in the organization of this course.

A. C. Ivy, M.D., Chicago.

THERAPY OF THROMBOSIS AND EMBOLISM

To the Editor:—I have read with interest and with appreciation your editorial entitled "Therapy of Thrombosis and Embolism" appearing in the October 26 issue of The Journal. Your statement regarding the findings of my associates and myself is correct and we appreciate being quoted in this manner.

It has always been our belief, and we have so stated in both our earlier paper and the one in surgery from which you quoted, that "an ounce of prevention is worth a pound of cure." Why it is that physicians will readily accept preventive measures in infectious and contagious diseases and yet blind themselves to the few simple and easily understood physiologic facts that underlie venous stasis as it occurs in the extremities is something I have never been able to understand Perhaps it is because I am a pathologist and not a clinician There was a time, before the advent of Dicumarol particularly, when clinicians, locally at least, were willing to listen to the suggestion that it is better to try to prevent thrombosis than to allow phlebothrombosis to occur and then to treat it It seems to us that the clinical mind is obsessed with the idea that the physician must do something, preferably something that will let the patient know that something is being done, irrespective of the dangers, the cost and, in the case of Dicumarol, the great amount of extra work that is thrown on the laboratory During the war, and even yet, we who work in laboratories have been and still are hard put to get enough technicians to carry out the necessary procedures From a laboratory man's point of view, having to make prothrombin time estimations when other means of handling the problem of phlebothrombosis are at hand is distinctly unwelcome

If certain sentences of the editorial had been italicized or put in boldface type, the editorial would have come much nearer to the truth For example, "This is combined with forceful, active leg movements from the first day " "Those who are opposed to the anticoagulants state that administration of heparin and Dicumarol poses a threat of serious hemorrhage and that these drugs are not able to affect the clots already formed" "Careful laboratory observations on the plasma prothrombin time preoperatively and after administration of Dicumarol are imperative for the safety of the patient when this drug is used"

Warren C Hunter, M D, Portland, Ore

URETHANE IN LEUKEMIA

To the Editor:—Since the report by Edith Paterson and her co-workers (*Lancet* **1**:677 [May 11] 1946) on the remarkable effect of urethane in the treatment of leukemia, the validity of this observation has been confirmed by a number of workers in this country (personal communications) and in our own clinic. The British investigators noted, however, that other forms of malignant neoplasia were not appreciably affected by the drug In 3 of 13 cases of advanced carcinoma of the breast and in 4 of 11 other forms of malignant disease the tumor masses underwent only temporary diminution in size

We have recently observed a man aged 44 who in June 1946 observed the generalized appearance of multiple skin tumors which in the next three months increased rapidly in size and number When he first came under our observation he was covered with hard tender skin nodules which varied in diameter from 0 5 to 3 0 cm Biopsy revealed a highly anaplastic undifferentiated carcinoma The site of the primary tumor could not be determined with certainty, but a lesion in a bronchus was suspected The patient was given urethane orally 3 Gm daily, as suggested by Dr. Paterson and her group Within four days the nodules were noticeably softer, and after one week they were definitely smaller by measurement Within thirty days they had almost entirely disappeared One tiny lesion remained in the right breast, and another small one was barely palpable in the right thigh On a maintenance dose of 2 Gm of urethane daily there has been no evidence of recurrence two months after the onset of treatment The leukocyte count has not been significantly altered The general condition of the patient remains good

The surprising action of this simple nontoxic drug merits wider attention, and our experience suggests that urethane may be of value in certain anaplastic types of metastatic carcinoma

Morton J Goodman, M D
Howard P Lewis, M D
University of Oregon Medical School,
Portland, Ore.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Board in Specialties were published in The Journal, Dec 21, page 1036

BOARDS OF MEDICAL EXAMINERS

Alabama· *Examination* Montgomery, Jan. 21 23. Sec, Dr. B F Austin, 519 Dexter Ave, Montgomery.

Arizona * Phoenix, January. Sec, Dr. J. H. Patterson, 826 Security Bldg, Phoenix

Arkansas * *Medical Examination.* June 5 6 Sec, Medical Board of the Arkansas Medical Society, Dr. L. J Kosminsky, Texarkana *Eclectic* Little Rock, June 5. Sec, Dr. C H Young, 1415 Main St, Little Rock

California *Examination* Los Angeles, March 10 13. Sec., Dr Frederick N Scatena, 1020 N. St, Sacramento 14

Colorado * Denver, Jan 7 10. Sec, Dr. J. B. Davis, 831 Republic Bldg, Denver 2

Connecticut * *Medical Examination* Hartford, March 11-12 Sec to the Board, Dr Creighton Barker, 258 Church St, New Haven *Homeopathic* Derby, March 11. Sec., Dr. J H Evans, 1488 Chapel St, New Haven

Delaware. *Examination* Dover, Jan 14 16. *Endorsement* Dover, Jan 21 Sec, Medical Council of Delaware, Dr. J S McDaniel, 229 S State St, Dover.

Georgia Atlanta and Augusta, June Sec, State Examining Boards, Mr R. C Coleman, 111 State Capitol, Atlanta 3.

Hawaii Honolulu, Jan 13 16. Sec, Dr. S. E Doolittle, 881 S Hotel St, Honolulu 53

Idaho Boise, Jan 14 Dir, Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg, Boise

Illinois Chicago, Jan 28 30 Supt of Registration, Department of Registration & Education, Mr Philip Harman, Springfield

Indiana *Examination* Indianapolis, June. Exec Sec, Board of Medical Registration and Examination, Miss Ruth V. Kirk, 627 K of P Bldg, Indianapolis.

Minnesota * Minneapolis, Jan 21 23 Sec, Dr. J. F Du Bois, 230 Lowery Medical Arts Bldg, St Paul 2

Mississippi *Reciprocity* Jackson, December. Asst. Sec, State Board of Health, Dr. R N. Whitfield, Jackson 113

Missouri *Examination* Kansas City, Jan 27 29 Exec Sec, Department of Education, Mr. John A Hailey, State Capitol Bldg, Jefferson City

Montana Helena, April 1 2 Sec., Dr. O. G. Klein, First National Bank Bldg, Helena.

Nebraska * *Examination* Omaha, June 1947 Dir, Bureau of Examining Board, Mr. Oscar F. Humble, State Capitol Bldg, Lincoln

Nevada *Examination* Carson City, May 5. Sec, Dr G H. Ross, 215 N Carson St, Carson City

New Hampshire Concord, March 13. Sec, Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord

New Jersey Trenton, June 17 18 Sec, Dr. E S. Hallinger, 28 W State St, Trenton.

New Mexico * Santa Fe, April 7 8 Sec, Dr LeGrand Ward 141 Palace Ave, Santa Fe.

New York Albany, Buffalo, New York and Syracuse, Jan 27-30 Sec, Dr. Jacob L Lochner, Education Bldg, Albany

North Carolina· *Endorsement* Raleigh, Jan 16 Act Sec, Mrs L McNeill, 226 Hillsboro St, Raleigh

North Dakota. Grand Forks, Jan 7-10 Sec, Dr G M Williamson, 4½ S Third St, Grand Forks

Oklahoma·* *Reciprocity* Oklahoma City, Dec 29 30 Sec, Dr. J. D Osborn Jr, Frederick

Oregon * Portland, Jan 22 25. Exec. Sec, Miss L M. Conlee, 608 Failing Bldg, Portland 4

Pennsylvania Philadelphia and Pittsburgh, July Acting Sec, Bureau of Professional Licensing, Department of Public Instruction, Mrs M G Steiner, 351 Education Bldg, Harrisburg

Rhode Island * Providence, Jan 2 3 Chief, Division of Examiners, Mr Thomas B Casey, 366 State Office Bldg, Providence

South Dakota * Pierre, Jan 21 22. Sec, Dr. Gilbert Cottam, State Capitol Bldg, Pierre

Texas *Examination* Galveston, Feb 20 22 Sec, Dr. T. J Crowe, 918 20 Texas Bank Bldg, Dallas 2

Vermont *Examination* Burlington, Jan 31 Feb 1. Sec, Board of Medical Registration, Dr F. J. Lawliss, Richford

Washington *Examination* Seattle, January 1947. Sec, Mr Nelson Vaughn, Olympia

West Virginia Charleston, Jan 6-8 Commissioner, Public Health Council, Dr N H Dyer, State Capitol, Charleston 5.

Wyoming Cheyenne, Feb 3 Sec, Dr G M Anderson, Capitol Bldg, Cheyenne

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* Basic Science Certificate required

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Connecticut Feb 8 Address State Board of Healing Arts, 250 Church St, New Haven

District of Columbia Washington, April 21 22. Sec, Commission on Licensure, Dr G C Ruhland, 6150 E Municipal Bldg, Washington 1

Florida May 31 Sec, Dr. M. W. Emmel, University of Florida, Gainesville

Iowa· Des Moines, Jan 14 Corresponding Sec, Division of Licensure & Registration, Mr. H W. Grefe, Capitol Bldg, Des Moines 19.

Michigan Ann Arbor and Detroit, Jan 10 11 Sec, Miss Eloise LeBeau, 101 N Walnut St, Lansing 15

Minnesota· Minneapolis, Jan 7 8 Sec, Dr Raymond N. Bieter, 105 Millard Hall, University of Minnesota, Minneapolis 14

Nebraska Omaha, Jan 14 15 Dir, Bureau of Examining Boards, Mr Oscar F Humble, 1009 State Capitol Bldg, Lincoln 9

Oregon Portland, March 1. Sec, Board of Higher Education, Mr C D Byrne, University of Oregon, Eugene

Rhode Island Providence, Feb 12 Chief, Division of Examiners, Mr Thomas B Casey, 366 State Office Bldg, Providence

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Medical Practice Acts: Board's Inherent Right to Revoke License Procured Through Fraud.—The plaintiff filed suit for an injunction to restrain the defendant State Board of Medical Education and Licensure from conducting a hearing for the revocation of his license to practice medicine and surgery. From a judgment for the defendant, the plaintiff appealed to the Supreme Court of Pennsylvania.

The plaintiff was licensed to practice medicine and surgery in Pennsylvania in 1910 pursuant to the provisions of a law passed in 1893 and still in force. He practiced his profession in Pennsylvania until 1913, when he left to practice in another state. In 1932 he returned to Pennsylvania and resumed the practice of his profession until June 30, 1944, when the state board issued a citation directing him to appear at a hearing before the board to answer charges that he had obtained his license to practice medicine through fraud, misrepresentation and deception. The present suit was then filed to question the authority of the state board to proceed with such hearing.

The first comprehensive legislation establishing a separate medical bureau and regulating the issuance and revocation of licenses to practice medicine and surgery was the act of June 3, 1911. The power of the Bureau of Medical Education and Licensure to revoke licenses under section 12 of that act was then believed to be restricted only to those licenses issued subsequent to June 3, 1911. An amendment to section 12 of the 1911 act was enacted in 1917 by which it was provided that the board had authority to revoke the license of "Any person who is licensed to practice medicine and surgery or any of its branches in the Commonwealth of Pennsylvania . . ."

The plaintiff first argued that the 1917 amendment was not valid in that the title of that act was in violation of article III, section 3, of the Pennsylvania constitution. The Supreme Court said that the title of the 1917 act recited that its purpose was "To further amend an act, approved the third day of June, one thousand nine hundred and eleven . . . by providing for further instruction prior to examination for licensure, by clarifying sections five (5) and twelve (12)." The narrow argument of the plaintiff is that the word "clarifying" does not give notice that section 12 of the act was amended to apply to physicians licensed prior to 1911. It is clear, said the Supreme Court, that a title which mentions that the act is amendatory, recites the particular prior acts it is designed to amend and further specifies the sections of the prior acts involved puts a person of a reasonably inquiring state of mind on notice of the subject matter of the act and the reader to further inquiry. That is all, concluded the court, that is required by article III, section 3, of the constitution. The stated intention of the legislature in passing the 1911 act and its amendments, the court continued, was to establish a complete system of licensing and regulation of physicians and surgeons. The only purpose of the amendment of section 12 of the act of 1917 was to bring within the jurisdiction of the board those licensed prior to the passage of this legislation. If it is to be said that there is a retroactive effect to these statutes, it can also be said that this was manifestly and clearly intended by the legislature by the very words of section 12 of the 1917 act and by the broad, general purpose of this legislation to bring all physicians and surgeons under the uniform operation of a single licensing and regulatory system. The legislative intent is too clear to require the use of rules of statutory construction.

The plaintiff also questions the authority of the board to revoke a license on the ground of fraud or misrepresentation where the statutory authority under which it acts does not enumerate these as grounds for revocation. While it is true, said the court, that such legislation is penal in nature and must therefore be strictly construed, it is also the general rule that, where the license should never have been granted for reasons such as fraud or forgery, the licensing authority has the inherent power to revoke it. The appellate courts of this state have not passed on this question, the Supreme Court pointed out. Respectable opinion, however, supports the principle that where a license, such as this, was procured by fraud, it may be revoked by the licensing authority regardless of the fact that fraud is not specified as a ground for revocation in the statute. By the mere fact that he was once issued a license and practiced under it, the plaintiff did not thereby acquire such vested right which would prevent the board from thereafter revoking it for cause.

Nor is the defense of laches, the final argument raised by the plaintiff, properly raised at this time, said the Supreme Court. This defense is based on the ground that a long time has elapsed since the original license was issued to the plaintiff and that the records on which he must rely to defend are now unavailable. Laches, the court concluded, is not to be imputed by the mere passage of time but must be determined after all the circumstances of the case are developed. Such is not the case here, for no hearing has been had on the merits. The record is devoid of prejudice to the plaintiff, which is a necessary element for the doctrine of laches to be applied. Accordingly the judgment in favor of the defendant board was affirmed and the appeal dismissed.—*Schireson v. Shafer, 47 A. (2d) 665 (Pa., 1946).*

Malpractice: Skill and Care Required of Dentists in Extracting Tooth.—The plaintiff sued to recover damages for the alleged negligence on the part of the defendant dentist in extracting one of her teeth and in the subsequent treatment rendered. From a judgment of nonsuit entered at the close of the plaintiff's evidence, the plaintiff appealed to the Supreme Court of North Carolina.

The plaintiff went to the office of the defendant dentist and told him she had a tooth she wanted pulled. She asked the defendant to be careful since he had extracted a tooth for her about a year before and "had broken it off." Defendant deadened the surrounding tissue with novocaine but in proceeding to extract the upper left bicuspid it broke off even with the gums. He succeeded in removing two fragments, however, and told the plaintiff to return to the office if her jaw continued to hurt her. Two days later the defendant was notified that the plaintiff's jaw was greatly swollen, looked red and was "running pus." He sent a prescription which was filled and taken without beneficial results. In about a week the plaintiff returned to the defendant's office, and his nurse packed her jaw and sent her home. Continuing to grow worse, the plaintiff again returned to the defendant's office and stated that she thought there was something in her jaw and suggested that an x-ray be taken. The defendant's brother assured her that there was nothing in the jaw and that an x-ray would only be a waste of money. The nurse again packed the jaw. When the plaintiff returned for the third time the defendant took an x-ray. The nurse developed it and said "There is nothing in it." Finally the plaintiff went to another dentist, who examined her swollen jaw, took another x-ray and removed "a little particle of the end of a root of tooth" and "a lot of little dead bone."

Viewing this evidence, said the court, with that degree of liberality required on demurrer, we think the permissible inferences are such as to make the issue of liability one for the jury. It is true that there is no allegation of incompetence on the part of the defendant to practice his profession. It is alleged, however, (1) that the defendant omitted to use reasonable care and diligence in the practice of his art or (2) that he failed to exercise his best judgment in the treatment of the case. Either allegation, said the court, if supported by competent evidence, suffices to carry the case to the jury on the issue of negligence. In the circumstances here disclosed, it is contended that reasonable foresight would have called for more attention and better care on the part of the defendant in the treatment of plaintiff's case. He was notified on three or four occasions and over a considerable length of time that plaintiff's jaw was not healing properly; that the constant and growing pain indicated to the plaintiff, and should have indicated to the defendant, the presence of some deleterious substance; that a proper examination or diagnosis would have disclosed, and did disclose to another dentist, the presence of harmful bacteria. These contentions, the court concluded, find enough support in the evidence to raise an issue of due care. Accordingly the judgment of nonsuit was reversed.—*Love v. Zimmerman, 38 S. E. (2d) 220 (N. C., 1946).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Obstetrics and Gynecology, St. Louis

52:349-528 (Sept.) 1946. Partial Index

Fetal Mortality in Breech Delivery. W. J. Dieckmann.—p. 349.
Maternal Obstetric Paralysis. J. T. Cole.—p. 372.
Anatomic Peculiarities of Human Umbilical Cord and Their Clinical Significance. Mary Spivack.—p. 387.
Composition of Human Placenta: I. Proximate Composition. J. P. Pratt, Mildred Kaucher, A. J. Richards, H. H. Williams and Icie G. Macy.—p. 402.
Treatment of Psychogynecic Disorders by Hypnoanalysis. W. S. Kroger. —p. 409.
Abnormal Presentations Among Malformed Infants, with Suggestions Concerning the Etiology. R. L. Young.—p. 419.
*High Protein, Low Caloric Diet for Prevention of Toxemia of Pregnancy. R. Luikart.—p. 428.
Review of 100 Cases of Ovarian Cancer. E. V. Helsel.—p. 435.
Observations on the Rh Factor in Pregnancy. C. H. Ingram.—p. 440.
Hemolytic Disease Associated with the Rh Factor in Twin Pregnancies. E. A. Conti and J. W. Glenn.—p. 446.
Seven Year History in Early Cervical Cancer. H. C. Taylor and H. B. Guyer.—p. 451.
Retroperitoneal Tumors Simulating Genital Tract Neoplasms. W. B. Stromme and H. J. Stander.—p. 456.
Torsion of Adnexal Tumors and Its Relation to Surgical Emergency. M. R. Kelberg and J. H. Randall.—p. 464.
*Sickle Cell Anemia in Pregnancy: Report of Case with Autopsy. R. W. Noyes.—p. 469.
Multiple Primary Carcinomas: S. L. Siegler and L. M. Silverstein. —p. 474.
*Seesaw Resuscitator for Treatment of Asphyxia in Newborn. R. S. Millen and J. Davies.—p. 508.

Diet to Prevent Toxemia of Pregnancy.—Luikart studied the effects on 1,000 pregnant women of a regimen of rigid weight control without interfering with adequate nutrition. The immediate objective was restriction of the total increase of weight to 16 pounds or less during pregnancy, and a maximum of 2 pounds in any one month. All the patients were within normal weight range when first seen. A gain of more than a pound in two weeks calls for reduction, not in the proteins and cooked vegetables, but in the quantity of such foods as ice cream, candy, pastries, cereals, macaroni, cheese, corn, potatoes and bread. The 1,000 patients whose weight was controlled by a restricted diet did not develop toxemia, preeclampsia or eclampsia. Maternal deaths did not occur. Patients following a prescribed diet high in protein have less anemia, less edema and less tendency to develop toxemia or eclampsia. The fetal mortality rate in this series was one-sixth the fetal mortality of an uncontrolled group. Large babies were not observed.

Sickle Cell Anemia in Pregnancy.—A multiparous Negro woman aged 32, in whom preeclampsia and sickle cell anemia were detected during the seventh month of pregnancy, failed to respond to conservative therapy and died following induction of labor. Noyes stresses that obstetricians practicing among Negroes should be familiar with the clinical picture of the disease and be prepared for an increased tendency for thrombosis and liability to fatal sepsis. In order that the diagnosis may be made before the terminal stage, the blood of all Negro mothers, or at least those showing a tendency toward anemia, should be allowed to stand in a sealed preparation for a few hours and examined for "sickling."

Seesaw Resuscitator for Asphyxia in the Newborn.—Millen and Davies used the seesaw method described by Eve (The Journal, April 1, 1944, p. 964) in asphyxia of a premature infant. In this method the position of the body is alternated frequently by rocking on a trestle, so as to allow the weight of the liver and abdominal contents to drop downward and thus pull air into the lungs when the head is raised and the feet lowered, and the reverse to take place, causing expulsion of air from the lungs when the head is lowered and the feet raised. The child's head was lowered, and immediately the familiar thick mucous plug was expelled through the child's nostrils. Alternate rocking of the child transferred and removed the weight of the abdominal viscera to the diaphragm and thereby established a nontraumatic pulmonary ventilation.

Canadian Medical Association Journal, Montreal

55:327-424 (Oct.) 1946

Effect of Antenatal Conditions on Newborn Child. L. G. Parsons. —p. 327.
Is Amebiasis a Medical Problem in Canada? M. J. Miller.—p. 336.
Treatment of Some Surgical Complications of Amebiasis. D. L. C. Bingham.—p. 341.
Role of Emotions in Production of Cardiovascular Disturbances. G. F. Strong.—p. 344.
Carcinoma of Bladder. R. H. Flocks.—p. 348.
Combined Use of Sodium Pentothal Intocostrin (Curare) Nitrous Oxide. R. T. Knight.—p. 356.
Use of Anthallan in Dermatology. L. P. Ereaux and G. E. Craig. —p. 361.
Role of General Practitioner in Diagnosis of Glaucoma. A. J. Elliot. —p. 363.
Surgical Treatment of Cancer of Larynx. H. McCart.—p. 365.
Tuberculosis in Naval Service from 1930 to 1945 (Inclusive). G. Jarry, A. Richardson and W. V. Maynard.—p. 368.
Enuresis. C. B. Stewart.—p. 370.
Chronic Nonspecific Thyroiditis. C. G. Hori.—p. 372.

Delaware State Medical Journal, Wilmington

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Increase in Age Group in Tuberculosis. L. D. Phillips.—p. 195.
Integrated Approach to Cerebral Palsy. Eunice Usher.—p. 196.
Rehabilitation of Speech for Crippled Children. Marian L. Gilmore. —p. 199.
Child Health—The Brightest Chapter. C. A. Marshall.—p. 201.
Nursing Activities. Mary M. Klaes.—p. 203.
Sanitary "Needs" Survey of Delaware. R. C. Beckett.—p. 204.
Laboratory Comments. R. D. Herdman.—p. 212.
Medical Treatment of High Blood Pressure. J. Q. Griffith Jr.—p. 215.

Florida Medical Association Journal, Jacksonville

30:115-166 (Sept.) 1946

Peripheral Vascular Disease. G. D. Lilly.—p. 141.
Origin and Progress of Florida Radiological Society. J. A. Pines. —p. 144.

33:171-222 (Oct.) 1946

Treatment of Sacroiliac Sprain by Manipulation: Report of 146 Cases. A. M. Bidwell.—p. 193.
Ligation of Inferior Vena Cava as Therapeutic Procedure. W. C. Rentz. —p. 199.

Gastroenterology, Baltimore

7:285-392 (Sept.) 1946

Gastroscopy and Its Relationship to Roentgenology in Diagnosis of Carcinoma of Stomach. H. J. Moersch and B. R. Kirklin.—p. 285.
Backache Due to Intra-Abdominal Disease. H. J. Tumen and J. C. Yaskin.—p. 294.
Note on Bacteriologic and Parasitic Studies of Intestinal Contents of Patients with Sprue. F. Milanes, A. Curbelo, A. Rodriguez and others.—p. 306.
Peptic Ulcer of Esophagus: Report of Patient with Ten Year Follow-Up. D. R. Morton and A. Brunschwig.—p. 314.
Hematemesis: Study of Underlying Causes. H. L. Thompson, J. M. Oyster, J. B. Heid and F. M. Morgan.—p. 320.
*Gastric Secretion in Duodenal Ulcer in Remission—Response to Caffeine Test Meal. V. H. Musick, H. T. Avey, H. C. Hopps and A. A. Hellbaum.—p. 332.
Vascular Changes in Mucosa in Experimental Nutritional Gastritis. B. N. Berg.—p. 340.

Gastric Secretion in Duodenal Ulcer in Remission.—Musick and his associates studied gastric secretion following the caffeine test meal in 20 patients with duodenal ulcer in remission and compared these data with the responses in 25 patients with active duodenal ulcers and in 10 healthy persons. The average total amount of free hydrochloric acid secreted normally during the two hour test period was 363 mg., while the average secretion of those patients with ulcer in remission was 631 mg. (an increase of 174 per cent). In patients with active duodenal ulcer the amount of acid secreted averaged 957 mg., or 264 per cent over that of the normal persons. The increased concentration of free acid following the caffeine stimulus appeared to be the important factor in relation to tissue destruction. The average concentration of free hydrochloric acid secreted normally during the two hour test period was 86 mg. per hundred cubic centimeters, while the average secretion of patients with ulcer in remission was 162 mg. per hundred cubic centimeters (an increase of 88 per cent). In patients with active duodenal ulcer the concentration of acid secreted averaged 214 mg. per hundred cubic centimeters, or 149 per cent over that of the normal persons. Patients presenting high prolonged secretory responses in the active stage of duodenal ulcer showed relatively high and prolonged secretory curves when tested in remission. Conversely, those who presented relatively short secretory curves during the active stage of duodenal ulcer responded with lower and less prolonged curves when tested in remission.

Illinois Medical Journal, Chicago

90:145-200 (Sept.) 1946

War and Disease. R. H. Major.—p. 162.
*Vitallium Plates Used in Repair of Large Hernias. R. W. McNealy and J. A. Glassman.—p. 170.
Recent Developments in Treatment of Hypertension. E. W. Cannady —p. 173.
Treatment of Fractures of Superior and Inferior Maxilla. W. A. McNichols.—p. 179.
Recovery From Primary Friedlander Pneumonia (Type B) on Therapy with Sulfadiazine and Penicillin. N. T. Welford.—p. 185.
A Rorschach Study of Symptomatic Schizophrenia Following Brain Trauma. J. L. Endacott.—p. 187.
Human Ornithosis: Report of Case Treated with Penicillin. T. Kirkwood.—p. 193.

Vitallium Plates in Repair of Large Hernias.—Since certain large hernias of long standing are difficult or impossible to repair by the usual reconstructive suture methods or by autogenous fascial grafts, McNealy and Glassman employed in certain instances the implantation of a mechanical inert prosthesis to replace the defective parietes and act as a scaffold about which new tissue might grow. It was the inert property that led the writers to make use of vitallium in anterior abdominal wall reconstructions. The metal plate is so constructed that the spermatic cord passes through an opening which offers protection to the region of the internal ring. The plate is also provided with perforations through which sutures can be inserted to hold it securely in place. Its position is such that it does not interfere with flexion of the thigh on the abdomen or with torsion of the pelvis. Vitallium plates can be applied also in the repair of umbilical hernias and in other types of ventral and postoperative hernias. This method of hernial repair is particularly useful in the treatment of elderly persons.

Indiana State Medical Assn. Journal, Indianapolis

39:425-476 (Sept.) 1946

Tumors of Nose and Throat. F. A. Figi.—p. 425.
Practical Application of Rh Factor in Congenital Hemolytic Anemia of Newborn (Erythroblastosis Fetalis), Habitual Abortion and Blood Transfusions. J. L. Haymond and A. S. Giordano.—p. 429.
Reconstructive Surgery Following Treatment of Osteomyelitis by Saucerization and Early Skin Grafting. J. A. McClintock.—p. 436.
Anesthetic Progress. J. M. Whitehead.—p. 440.
Ambulatory Treatment of Phlebitis. C. W. Day.—p. 442.
Thiourea and Its Derivative Thiouracil as Goitrogen. I. E. Brenner. —p. 445.

Journal-Lancet, Minneapolis

66:319-350 (Oct.) 1946

Diet and the Liver. H. O. Drew.—p. 319.
Anesthesia in General Practice. R. T. Knight.—p. 323.
Thiouracil in Management of Hyperthyroidism. R. L. Egan.—p. 326.
Immunology of Poliomyelitis. C. A. Evans.—p. 328.

Journal of Nat. Cancer Inst., Washington, D. C.

7:1-46 (Aug.) 1946

Neutral Beta Glycerophosphatase Activity in Normal and Neoplastic Tissues. J. P. Greenstein and Florence M. Leuthardt.—p. 1.
Survey of Hypnotics in General with Regard to Pulmonary Tumor Induction in Mice. C. D. Larsen, with technical assistance of P. B. Rhoads Jr. and Lucille L. Weed.—p. 5.
Enzymatic Desamination and Dephosphorylation of Ribosenucleic and Desoxyribosenucleic Acids. J. P. Greenstein, C. E. Carter, H. W. Chalkley and Florence M. Leuthardt.—p. 9.
Studies on Enzymatic Degradation of Nucleic Acids. C. E. Carter and J. P. Greenstein.—p. 29.

Military Surgeon, Washington, D. C.

99:273-360 (Oct.) 1946

Neuroectodermal Tumors Containing Neoplastic Neuronal Elements: Ganglioneuroma, Spongioneuroblastoma and Glioneuroma, with Clinicopathologic Report of 11 Cases, and Discussion of their Origin and Classification. H. Kuhlenbeck and W. Haymaker.—p. 273.
Naval and Marine Corps Casualties in Wars of United States. L. H. Roddis.—p. 305.
*Intractable Amebiasis—A Warning, with Report of Case. H. A. Monat and J. E. Hertner.—p. 310.
Bacteriologic Study of Resistance of Organisms Isolated from Cases of Nonspecific Urethritis to Three Chemotherapeutic Agents. A. M. Weckstein, with the technical assistance of S. H. Rasmussen.—p. 312.

Intractable Amebiasis.—In view of the prospective increase of amebiasis in the United States, Monat and Hertner issue a warning that cases which show dramatic improvement after one course of antiamebic treatment should be forewarned that a relapse is possible. A combined treatment of emetine parenterally and diodoquin simultaneously in early cases of amebiasis (ten days of emetine 1 grain [0.06 Gm.] and fifteen days of diodoquin 3⅕ grains [0.2 Gm.] four times a day before meals) and in chronic cases emetine bismuth iodide 2 grains (0.13 Gm.) at bedtime for ten days, diodoquin 3⅕ grains for fifteen days four times a day, vioform intraduodenally and carbarsone 1 per cent retention enemas twice weekly will insure clearing up amebiasis in the majority of cases. At least twenty to thirty stools should be collected between treatments before a patient is pronounced clear of the infection. A case is presented which suggests that there are cases which are resistant to continued and combined treatment.

Occupational Medicine, Chicago

2:183-284 (Sept.) 1946

Psychoneurosis and Industry. W. F. Schaller.—p. 183.
Significance of Industrial Cancer in Problem of Cancer. W. C. Hueper. —p. 190.
Rehabilitation of Sick and Injured. R. L. Diveley.—p. 201.
Tuberculosis Control in Industry: Results from 1941 to 1945. C. R. Allison.—p. 207.
Sprain or Momentary Dislocation of Talus? R. R. De Nicola.—p. 214.
Treatment of Wounds. J. J. Moorhead.—p. 219.
Values and Problems in Industrial Recreation. F. R. Eastwood.—p. 226

Philippine Medical Association Journal, Manila

22:191-222 (May) 1946

Philippine Medical Association: Retrospect and Prospect: Presidential Address. V. de Dios.—p. 193.
Rh Factor: Incidence Among Filipinos. C. P. Manahan and M. Andaya. —p. 199.
Penicillin in Treatment of Gonorrhea and Syphilis. A. F. Brand.—p. 203.
Bilateral Orchiectomy in Cancer of Prostate. L. F. Torres Jr. and P. Morales.—p. 207.

Virginia Medical Monthly, Richmond

73:393-436 (Sept.) 1946

Annual Meeting (Walter Reed Night), Section on History of Medicine, March 12, 1946. J. H. Smith.—p. 393.
Glimpse at Development of Immunology and Allergy in Light of Contribution of Six Nobel Prize Winners: Von Behring, Richet, Bordet, Metchnikoff, Landsteiner, Koch. W. B. Blanton.—p. 395.
Historical Aspects of Infectious Diseases. K. Nelson.—p. 398.
Dr. William S. Halsted. H. J. Warthen Jr.—p. 403.
Making A Correct Diagnosis: Its Importance and Problems. M. Edmunds.—p. 408.
Review of 129 Consecutive Cases of Tuberculosis Treated with Pneumothorax Over Ten Year Period. T. N. Hunnicutt Jr.—p. 410.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

54:341-378 (Sept.) 1946

Gastrojejunal Ulcer Following Gastric Resection. J. W. Baker.—p. 341.
Spinal Anesthesia in Vaginal Deliveries: Report of 1,000 Inductions. E. W. Cartwright and W. C. Rogers.—p. 346.
Transthoracic Operation for Megesophagus. G. W. Nagel and J. F. Menke.—p. 352.

54:379-410 (Oct.) 1946

Hypoxemia of Fetus. H. F. Traut.—p. 379.
Duodenal Septum. O. F. Lamson.—p. 384.
Meralgia Paresthetica: New Causal Observations. E. W. Mack.—p. 390.
Protein Depletion in Pregnancy Toxemia. H. Spitzer.—p. 392.
Electrotherapy of Levator Muscle of Anus (Levator Ani) During Postpartum Period and in Some Gynecologic Conditions. H. Vignes. —p. 394.
Further Observations on Prostigmine in Delayed Menstruation and Pregnancy. D. Parrella.—p. 397.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Australian and New Zealand J. Surgery, Sydney

15:235-312 (April) 1946

Surgical Lessons of Last Five Years of War and Their Application to Postwar Surgical Practice. V. Hurley.—p. 235.
Some Observations on Head Injuries and Their Complications. L. Rogers.—p. 249.
Abdominal Injuries in Second New Zealand Expeditionary Force During Italian Campaign. T. D. M. Stout.—p. 253.
*Anticoagulant Effect of Spleen. E. R. Trethewie.—p. 286.
Influence of Hind Legs and Pelvis on Blood Coagulation. E. R. Trethewie.—p. 292.
Pulmonary Hydatid Disease: Sign of Camelote. J. A. Jenkins.—p. 296.
Resection of Bladder Neck in Female, with Report of Case. B. Melville. —p. 299.

Anticoagulant Effect of Spleen.—Trethewie describes experiments on dogs which demonstrate that, when diluted heparinized blood is perfused through the spleen, the fluid develops increased anticoagulant activity, and this was found to be unassociated with alterations in the number of platelets in the fluid, heparin or the prothrombin content. It seems likely that there is some anticoagulant material operating, as has been shown to be the case with the liver.

British Heart Journal, London

8:115-170 (July) 1946

Action of Magnesium on Heart, P. Szekely.—p. 115.
Ruptured Congenital Aneurysm of Posterior Sinus of Valsalva. R. N. Herson and M. Symons.—p. 125.
Healed Dissecting Aneurysm. M. Cassidy and J. Pinniger.—p. 130.
Silent Dissection of Aorta. J. Hoskin and Frances Gardner.—p. 141.
Genesis of Normal Electrocardiogram. A. Hill.—p. 147.
Heart Vector and Leads. H. C. Burger and J. B. Van Milaan. —p. 157.
Heart in Sternal Depression. W. Evans.—p. 162.

British Journal of Ophthalmology, London

30:501-572 (Sept.) 1946

Nineteenth Century Provincial Eye Hospitals, with Special Reference to Those no Longer Extant. A. Sorsby.—p. 501.
Bilateral Symmetrical Cystic Detachment of Retina. H. B. Stallard. —p. 547.
Pterygium. Its Nature and New Line of Treatment. S. Kamel.—p. 549.

Lancet, London

2:477-512 (Oct. 5) 1946

Conducing to Cure: Social Psychiatry in Treatment of Neurosyphilis by Induced Malaria. M. Whelen and M. H. Bree.—p. 477.
Use of Reassurance. T. G. Armstrong.—p. 480.
*Post-Hepatitis Syndrome. Sheila Sherlock and V. Walshe.—p. 482.
Pathology of Postanal Pilonidal Sinus: Its Bearing on Treatment. D. H. Patey and R. W. Scarff.—p. 484.
Nicotinamide Methochloride Estimations in Sprue and Amebiasis. J. W. Paulley and G. J. Aitken.—p. 486.
Relations of Steroid Hormones and Anhydro-Hydroxy-Progesterone to Fibromatosis. R. Igiesias and A. Lipschutz.—p. 488.
Remedial Correction of Valgus Foot Strain by Foot Pronation Exercise. E. T. Bailey and B. S. Harrens.—p. 490.

Post-Hepatitis Syndrome.—Sherlock and Walshe studied a group of 20 soldiers in whom symptoms and usually an enlarged liver have remained after clinical recovery from acute hepatitis. Serum bilirubin, phosphatase and differential protein estimations, the colloidal gold reaction, the intravenous hippuric acid test and the sulfobromophthalein test showed no abnormalities. There was an occasional rise in the serum cholesterol level. Hepatic sections obtained by aspiration biopsy were usually normal. In some sections slight fatty change in the liver cells and occasional scarring in the portal tracts could be seen. No difference was found between these results and those obtained in subjects who had recovered from acute hepatitis and were now free from symptoms. The possible psychogenic basis of the symptoms is discussed. The palpable liver seems due to downward displacement of the liver edge rather than to enlargement. The value of aspiration liver biopsy in the differentiation of this syndrome from post-hepatitis cirrhosis is emphasized.

Medical Journal of Australia, Sydney

2:217-252 (Aug. 17) 1946

*Studies of Maternal and Infantile Blood Factor Relationships. Lucy M. Bryce, Rachel Jakobowicz and Norma McArthur.—p. 217.
Tuberculosis in Pregnancy. W. L. Calov.—p. 224.
Pulmonary Tuberculosis in Pregnancy. T. D. Hughes.—p. 230.
Burning Feet Syndrome: Observations of Cases Among Prisoners of War in Manchuria. D. J. Brennan.—p. 232.
*Dangerous Blood Donors. G. A. Kelsall and D. Nicholas.—p. 234.

Maternal and Infantile Blood Factor Relationships.—Bryce and her associates made a survey of 850 women attending the antepartum clinic of the Queen Victoria Hospital in Melbourne. Examination of the blood of both mother and child revealed that the Rh factor is important in the production of hemolytic disease of the newborn. Rh incompatibility is related to fetal abnormalities. It appears that A, B, O incompatibility may be a cause of hemolytic disease, especially the milder manifestations such as late anemia, since in all cases in which these manifestations occurred there was a rise in the isoagglutinin titer in the maternal serum and because in the large number of cases (595) in which complete compatibility between the blood of the mother and that of the child existed the possible manifestations of hemolytic disease consisted of only 2 doubtful cases of icterus gravis. There is no correlation between the anti-Rh titer of the maternal serum and the severity of hemolytic disease in the child. The isoagglutinin titer in the maternal serum early in pregnancy is not significantly higher in those cases in which there is a possibility of immunization by the fetus than it is in those in which the mother and child belong to compatible blood groups. At or shortly after delivery the titer of maternal isoagglutinin corresponding to the infant's A or B factor may rise. This rise appears to be associated in most cases with the secretor state in the infant. In other series of women there was a significantly higher incidence of prematurity, stillbirths and icterus gravis neonatorum among the Rh-negative women.

Dangerous Blood Donors.—Kelsall and Nicholas stress that all parous women and all persons who have themselves been the recipient of a blood transfusion should be regarded as potentially dangerous donors. If blood of such persons is to be used for transfusion purposes it should be examined for isoantibodies. It is particularly important when giving transfusions to infants suffering from hemolytic disease of the newborn that the donor's serum be examined for abnormal antibodies before it is administered. Conversely, if the recipient of a blood transfusion is a parous woman or has received a transfusion at an interval longer than a week previously, the cross typing test should be performed at 4 C., 20 C. and 37 C. for one hour. When, from the previous history, the blood of either the donor or the recipient is suspected of containing isoantibodies, and if these cannot be detected by the usual agglutinating technic, one or more of the sensitive methods should be employed.

2:253-288 (Aug. 24) 1946

*Tick Typhus in North Queensland. R. Andrew, J. M. Bonnin and S. Williams.—p. 253.
North Queensland Tick Typhus: Comparative Study of Rickettsia with that of Murine Typhus. J. F. Funder and A. V. Jackson.—p. 258.
Id.: Studies of Etiologic Agent and Its Relation to Other Rickettsial Diseases. H. Plotz, J. E. Smadel, B. L. Bennett, R. L. Reagan and M. J. Snyder.—p. 263.
Alcohol. C. C. McKellar.—p. 268.
Alcoholism. S. J. Minogue.—p. 271.
Reproductions of Radiographs by Solarization. D. G. Maitland.—p. 273.

2:289-324 (Aug. 31) 1946

Clinical and Pathologic Features of Dysenteries. R. Andrew.—p. 289.

2:325-360 (Sept. 7) 1946

Interstitial Neuritis and Pressure Theory of Pain: Critical Review and Reflex Hypothesis. M. Kelly.—p. 325.
Influence of Anesthetics on Content of Deaminating Enzyme in Human Plasma. E. R. Trethewie.—p. 334.
Report on Psychopathic States of Australian Imperial Force in Malayan Campaign. C. R. Boyce.—p. 339.
Some Problems of Backache and Sciatica. L. Lindon.—p. 345.

Tick Typhus in North Queensland.—Andrew and his associates describe a North Queensland tick typhus which is probably transmitted by the adult and also possibly by the larval tick of Ixodes holocyclus. There is an incubation period of seven to ten days followed by the development of an eschar, enlarged lymph nodes, malaise, headache, fever and a rash. The disease is mild, runs a course of approximately a week and subsides by lysis. There are no complications or sequelae. The Weil-Felix test produces agglutination with Bacillus proteus OX19 and in some cases with Bacillus proteus OX2. Bacillus proteus OXK is not agglutinated. In murine typhus there is no eschar and the lymph nodes are seldom involved. Scrub typhus has many features in common with tick typhus, notably the eschar and enlarged lymph nodes. Scrub typhus is a severe disease, complications are frequent, and it has a mortality rate of about 8 per cent to 10 per cent. Tick typhus, on the other hand, is always a mild disease. The etiologic agent of North Queensland tick typhus is different from a number of other rickettsial agents and may be a hitherto undescribed Rickettsia.

South African Medical Journal, Cape Town

20:461-496 (Aug. 24) 1946. Partial Index

Plague Survey of Ngamiland, Bechuanaland Protectorate, During Epidemic of 1944-1945. D. H. S. Davis.—p. 462.
*Treatment of Herpes Zoster with Contramine. D. N. Bengis.—p. 467.
Induction of Labor by Puncture of Membranes. J. O. E. Apthorp.—p. 469.
*Case of Severe Septic Wound of Left Lower Leg Treated with Small Deep Grafts. S. V. Humphries.—p. 472.

Treatment of Herpes Zoster with Contramine.—Contramine, an organic sulfur compound, has the formula diethyl-ammonium-diethyl-dithio-carbamate. Bengis says that it was first used in the treatment of herpes zoster in 1943 by Hawkes, who found it effective not only in this condition but also in chickenpox. Bengis reviews the results of treatment with contramine in 16 cases of herpes zoster. The drug was given intramuscularly in doses of 0.125 Gm. per cubic centimeter. Since there was no guide as to the number of injections required, the pain which occurred with the onset of the herpes was used as the criterion. The drug was given every day until the pain had subsided, with a maximum of six injections. The treatment seemed to cut short the duration of pain and dry the lesions fairly rapidly. The response in older patients was less favorable. Contramine did not prevent the full development of the lesions. No toxic effects were observed, with the exception of nausea in the youngest patient. In only 1 patient was there postherpetic neuralgia. In this case the lesion was extensive, involving five dorsal segments.

Small Deep Grafts in Treatment of Septic Wound of Leg.—A youth aged 18 sustained a severe lacerated wound of the lower part of the left leg in a truck accident. The wound sloughed, with the discharge of copious pus. A raw area was left approximately 8 inches long by 4½ inches wide. This was treated twice daily with gauze soaked in diluted solution of sodium hypochlorite with the object of rendering the surface aseptic. Two short courses of penicillin were given, one just after the wound sloughed, the second just after skin grafting. The grafts were removed from the outer surface of the thigh by means of a needle and scalpel. The grafts were transferred to the raw area on the tip of the needle and were pressed into place. Over 100 grafts were used, these being placed from ¼ to ⅙ of an inch apart. Perforated oil silk was used to cover the grafts, and the whole was covered with gauze wrung out in isotonic solution of sodium chloride. The entire wound had healed less than two months later. This case is noteworthy, says Humphries, because of the taking of grafts over so large an area, which was far from aseptic, and because of their survival in spite of the development of frank sepsis.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

90:799-838 (July 13) 1946. Partial Index

Experiences with Gamma Globulin in Measles. S. van Creveld and G. A. Fehmers.—p. 800.
Treatment of Pseudarthrosis of Neck of Femur. C. P. van Nes.—p. 803.
*Pulmonary Changes in Patients with Furunculosis. T. J. J. H. Meuwissen and G. B. A. Schasfoort.—p. 807.
Strangulation of Penis. A. G. J. Hermans.—p. 810.

Pulmonary Changes in Patients with Furunculosis.—Meuwissen and Schasfoort studied 14 patients with furunculosis and detected pulmonary changes in 9 of them. Five of these 9 complained of fatigue and cough. The other 4 presented symptoms of septicemia. The necropsy of 2 of these 4 revealed small, subpleural staphylococcic abscesses. These foci are probably the result of hematogenic dissemination of staphylococci. The authors observed that the pulmonary changes sometimes persist longer than the furuncles, and they think the patients should be kept in bed until all pulmonary changes have subsided. Search for tubercle bacilli was negative. The authors think that in the after-war period pyodermias probably will be frequent and the possibility of pulmonary changes should be kept in mind.

Nordisk Medicin, Gothenburg

30:1085-1132 (May 17) 1946. Partial Index

Medical Problems in Aviation and Results. E. H. Christensen.—p. 1085.
Carrot Soup in Dyspepsia in Infants. P. Selander.—p. 1091.

Hospitalstidende

*Osteomyelitis After Intraosseous Infusion. T. Søndergaard.—p. 1093.

Hygiea

Myoplegia Kaliopenica. R. Berlin.—p. 1099.
Blood Values in Healthy Infants Treated with Iron. K. L. Möller and B. Vahlquist.—p. 1101.
Diagnostic Significance of Calcification of Heart Valves. L. Walk.—p. 1105.

Svenska Läkaresällskapets Förhandlinger

Possibility of Directing Certain Chemotherapeutic Agents to Definite Tissues. S. Helander.—p. 1106.
Surgical Treatment of Angina Pectoris. Inga Lindgren.—p. 1114.

Osteomyelitis after Intraosseous Infusion.—Søndergaard found only 1 case of osteomyelitis after intraosseous infusion in the literature (Behr). He reports 5 cases, 3 after intratibial infusion in infants and 2 after intrasternal infusion in adults. In 1 instance the complication was the probable cause of death and in another caused permanent injury to the growing zone of the bone. One child died of intercurrent disease and 1 is still under treatment; extensive destruction of the proximal growing zone in the tibia occurred in both. The fifth patient recovered after three months. Since, as a rule, intraosseous infusion is employed in weakened patients susceptible to infection, strictest asepsis and antisepsis must be observed. Technic and apparatus must allow the infusion fluid to be kept sterile, and there must be no air contamination. Prolonged infusion increases the risk of infection. Infusion fluid isotonic with the blood is advised. Bacteremia seems to be a contraindication. Intraosseous infusion should be given only when access to the veins is blocked or is difficult. The method presents so many advantages, especially in the pediatric clinic, that continued use with improved technic is thought justifiable. If in spite of all precautions the procedure is found to involve a certain risk of osteomyelitis, its justification will have to be reconsidered.

30:1173-1232 (May 31) 1946. Partial Index

Roentgen Diagnosis in Disk Prolapse. K. Lindblom.—p. 1173.
Apparatus for Intravenous Injection of Aminosol. F. Lidström and A. Wretlind.—p. 1177.

Finska Läkaresällskapets Handlingar

*Pale Granular Substance of Cell. I. Wallgren.—p. 1201.

Hygiea

Melanin Pigmented Tumors: Thirteen Cases of Malignant Melanoma (Melanomsarcoma) in Eye. A. Bergstrand.—p. 1213.
Types of Healing in Pulmonary Abscesses. A. Ekengren.—p. 1217.
Operative Treatment of Femoral Hernia, with Special Regard to Recurrence. O. Lindahl.—p. 1220.

Pale Granular Substance of Cell.—Wallgren has found in the cytoplasm and the nucleus of living cells a double granular system in a structureless basic substance. Pale granules occur abundantly as floating drops of liquid situated close to chromophil granules, which often come into contact with one another by thread shaped bridges but do not float over into the shifting pale drops. The chromophil drops are evenly distributed in the basic substance; the pale drops, which do not stain, appear more unevenly. In stained cells these drops are visible as unstained granules beside the stained granules. In dark field illumination the pale granular substance is seen distinctly because of its refracting ability, while the chromophil drops appear like dark round shadows. Chemical reactions carried out with the pale granules suggest that they may contain carbohydrate matter. They are demonstrable in places in the cell where especially lively chemical processes may be assumed to occur and are thought to serve as depots for chemical energy and to be important for the vital functions of the cell.

Book Notices

Ophthalmology in the War Years. Edited by Meyer Wiener, M.D., Professor of Clinical Ophthalmology, Washington University School of Medicine, St. Louis, Missouri. Volume I (1940-1943). Cloth. Price, $13.50. Pp. 1,166. Chicago: Year Book Publishers, Inc., 1946.

This volume is the result of a request by the Subcommittee on Ophthalmology of the National Research Council for a review of the literature on ophthalmology in the war years. The author acted as editor in chief and supervised the work of the thirty-six associate editors among whom it was divided. An attempt was made to include all the important contributions in the English speaking countries, South America and Europe. As a result of the exigencies of the war, the abstracts on the European literature, especially from Germany, are necessarily meager. Over eight thousand (8,286) articles have been abstracted or included in the bibliography.

The basic and fundamental sciences, such as anatomy and embryology, biochemistry, pharmacology and toxicology, comparative ophthalmology, physiologic optics, electrophysiology, experimental and general pathology and bacteriology are reviewed in abstract form. Similarly the clinical and scientific advances involving every structure of the eye are detailed under such headings as aqueous humor, congenital anomalies, conjunctiva, cornea and sclera, the lens, lids and lacrimal apparatus, neuro-ophthalmology, ocular muscles, orbit, eyeball and sinuses, the pupil, retina and vitreous. There are also several individual chapters on color blindness, glaucoma, injuries, methods of examination, instruments and apparatus, refraction and accommodation, surgery of the eye, systemic diseases, therapeutics, trachoma and tumors.

As is inevitable in such a work, composed of the efforts of many varied talents, some chapters are more adequately covered than others, depending on the talents and abilities of the individual authors. The volume covers an immense amount of work and will no doubt be useful to those engaged in research and writing. It will probably be of limited value to the average clinical ophthalmologist in spite of the immense amount of information that it contains. The editor in chief is to be commended for compiling such a valuable work during such arduous times as the war years.

Progress in Neurology and Psychiatry: An Annual Review. Edited by E. A. Spiegel, M.D., Professor and Head of the Department of Experimental Neurology, Temple University School of Medicine, Philadelphia. Cloth. Price, $8. Pp. 708. Grune & Stratton, Inc., 443 Fourth Ave., New York 16, 1946.

This is the first of a new series of annual reviews contemplated by its editor, whose aim it is to report on the progress made in the fields of neurology and psychiatry. To insure a semblance of cohesion and evaluation of the material offered, the editor invited a number of distinguished specialists, actively engaged in their various specialties, to cull the literature for any significant contributions and trends and to report their findings. The result is more than abstract service, for it is also a critical survey of the sciences involved. The latter fact justifies the work and makes it a valuable reference tome to the practicing neuropsychiatrist.

Interesting is the fact that out of 695 pages only 155 are devoted to psychiatry, whereas neurology is amply covered in 540 of the closely typed pages.

New Drugs. By Arthur D. Herrick. With foreword by Austin E. Smith, M.D., Secretary, Council on Pharmacy and Chemistry of the American Medical Association, Chicago. Cloth. Price, $4. Pp. 303. Revere Publishing Company, 11 Stone St., New York 4, 1946.

The tremendous scientific advances of the last ten years and the increasing complexity of pharmaceutic manufacturing and marketing make it difficult for people in the pharmaceutic manufacturing industry to keep adequately informed. Their tasks and responsibilities have also been greatly increased by the drug legislation passed in 1938 and the hundreds of regulations and rulings which have been made by various governmental agencies and bureaus since that time. To aid pharmaceutic manufacturers, professional advertising agency personnel and many others connected in one way or another with the business of developing and marketing pharmaceutic and biologic products, Arthur D. Herrick has written this invaluable book. In addition to tracing the history of new drug legislation and explaining its background and general application, Herrick covers comprehensively and with sufficient detail such matters as components and composition, labeling and samples and investigations to determine safety and effectiveness. He also outlines the proper methods for applying for approval to market new drugs and provides practical instructions for the person who must act as the contact between his firm and various governmental agencies. The book also includes an appendix giving the history of the elixir sulfanilamide fiasco and another including the Federal Food, Drug and Cosmetic Act and regulations.

The Management of Obesity: A Handbook for the General Practitioner. By Louis Pelner, M.D. Cloth. Price, $3. Pp. 144, with illustrations. Personal Diet Service, 145 W. 45th St., New York 19, 1946.

This book has been designed for the general practitioner as a guide in the practical management of obese patients. In this effort the author, perhaps wisely, included a minimum of physiologic and pathologic data, avoided controversial views in etiology and diagnosis and applied a number of simplified illustrations, food charts, diet lists and low caloric menus. The principles and details of treatment as expressed by the author are, on the whole, sane and in good accordance with present knowledge. This book should serve well the general practitioner in solving important problems in his daily practice.

L'anémie infectieuse. Par G. Hemmeler, chef de Clinique médicale universitaire, Lausanne, Switzerland. Paper. Price, 5 Swiss francs. Pp. 76, with 11 illustrations. Benno Schwabe & Co., Klosterberg 27, Basel 10, 1946.

This little paper-covered book is concerned with the anemia of infection, in which there has been relatively little interest, although a few authoritative articles, notably from Wintrobe's clinic, have recently appeared. The object of the present work is to study the frequency of infectious anemia, the changes in blood and bone marrow, the pathogenetic mechanisms and finally therapy. It was found that most febrile diseases resulted in anemia, most pronounced in cases showing the greatest elevations in temperature, sedimentation rate and leukocytosis. A series of 25 cases is presented in which careful studies of the blood morphology and the sternal bone marrow were made. These showed a normochromic hypoplastic type of anemia due to a lack of erythroblastic maturation. Serum iron studies gave low values, indicating that the anemia was "toxic" in type with a direct disturbance in erythropoiesis. It was found that transfusions of blood represented the only valuable method of therapy of the anemia.

This monograph can be recommended as a clear, straightforward account of most of our available knowledge of the anemia in infection and should help to fill the gap which the author says exists in the description of this common and therefore important field. The author probably did not have access to the comprehensive study by Dr. Gulli Lindh Muller of the blood in tuberculosis (Commonwealth Fund, 1943).

Libido and Delusion. By Louis S. London, M.D. Second edition. Cloth. Price, $3.50. Pp. 259. Mental Therapy Publications, 1150 Connecticut Ave., Washington 6, D. C., 1946.

Psychiatric and psychoanalytic writing is often difficult to read and confusing; this book is incoherent, unintelligible and filled with incorrect assertions. After presenting 353 sessions of analysis of a schizophrenic, covering 100 pages of incomprehensible material, the author says "this case is not reported as a therapeutic success. It merely shows that some cases of schizophrenia can be analyzed as successfully as cases of neuroses."

Men, Mind and Power. By David Abrahamsen, M.D., Department of Psychiatry, Columbia University, New York. Cloth. Price, $2. Pp. 155. Columbia University Press, 2960 Broadway, New York 27, 1945.

In a rather disorganized fashion the author presents a mixture of ideas concerning the psychologic forces underlying the behavior of the German people in general and the Nazis in particular. Some of the ideas are naive, others penetrating. The general presentation is often confused. The book is a far cry from the detailed and systematic study which is a prerequisite to an enduring contribution on this subject.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

BOOSTER DOSES OF TETANUS TOXOID AND TYPHOID VACCINE

To the Editor:—Two brothers aged 7 and 5 years each received 2 cc. of tetanus-diphtheria toxoid (Lilly) at three months intervals in 1945. One boy has eczema. Should they be given booster doses of tetanus toxoid and, if so, when? What is the dosage of typhoid vaccine, both subcutaneous and intradermal, if administered as a booster dose at yearly intervals?

J. J. Johnson, M.D., Las Vegas, N. M.

ANSWER.—Since the children described in the query were inoculated with tetanus-diphtheria toxoid in 1945, it is not necessary to administer additional material at present except in the event of injuries likely to lead to the development of clinical tetanus. The indications for such an injection would be Fourth of July accidents, penetrating wounds, dirty lacerations, severe burns, compound fractures, severe crushing injuries and lesions of any type with possible contamination with soil. The booster dose of tetanus toxoid need not be large. Thus, doses of 0.1 cc. or less induce prompt rises, of adequate level and duration, in the antitoxic titers of those inoculated as long as five years previously with tetanus toxoid alone or in combination with diphtheria toxoid (McBryde, Angus, and Poston, M. A.: *J. Pediat.* 28:692 [June] 1946). The material may be given either intradermally or subcutaneously, and either fluid or alum precipitated tetanus toxoid may be used, individually or in conjunction with other antigens.

The problem of typhoid booster doses, given at yearly intervals, is essentially the same as that of tetanus. A minute dose of typhoid vaccine, preferably by the intradermal technic, will promptly restore active immunity to this disease. The dose should be 0.1 cc. of that dose which was associated with minimal, or no, constitutional reaction during basal immunization. In case no reaction appeared during the original series, it is desirable to use 0.1 cc. of the third strength used initially.

IMMUNIZATION OF ALLERGIC CHILD

To the Editor:—A boy aged 8 years has received injections for allergy for the past two years. He has not been immunized. His mother wishes to know if the usual childhood immunization measures would be safe, including smallpox, diphtheria and tetanus.

M.D., Michigan.

ANSWER.—If the patient's allergic condition does not include eczema at this time there is no contraindication for immunization with smallpox vaccine. Usually patients who are allergic tolerate, without difficulty, diphtheria toxoid and tetanus toxoid as well as immunization with vaccines such as pertussis vaccine. Occasionally in patients younger than 8 years who are allergic, one encounters a local swelling together with a rise in temperature and general malaise following the first dose of diphtheria toxoid, tetanus toxoid or pertussis vaccine. To avoid the possibility of this type of unusual reaction it may be advisable to reduce the first dose by one half. This precaution, however, is not usually followed, because of the infrequency of such an untoward reaction. Should a general reaction occur, the next dose of the vaccine or toxoid should be reduced and given only after all local swelling and itching have disappeared from the site of the previous injection.

POTENCY STANDARDS OF TESTOSTERONE

To the Editor:—What is the relation between capon units and milligrams in reference to testosterone?

M.D., Illinois.

ANSWER.—The capon unit employed in the biologic standardization of certain androgenic preparations is not applicable to products of definite composition, such as testosterone, the dosage and potency of which may be expressed in terms of weight. Some idea of the comparative potency of a product standardized in terms of capon units and a product representing a given weight of testosterone may be obtained from the following figures received from a competent investigator in the endocrine field: The international unit of androgenic activity is equivalent to 0.1 mg. of crystalline androsterone, 1 capon unit is equivalent to 1.5 international units and 1 mg. of testosterone propionate represents approximately 50 international units, or about 32 capon units.

POSSIBLE PAGET'S DISEASE

To the Editor:—One year ago while in a summer camp a girl aged 17 years developed an eczematous eruption about the nipples, with redness, itching, burning sensation and secretion. At this time she had a high temperature, and the breasts were hard and inflamed. Penicillin was administered parenterally and boric acid compresses were applied to the breasts. The condition subsided and the patient remained well for one year, until there was a recurrence at camp this summer. Please discuss the probable diagnosis, prognosis and treatment recommended.

Hyman Rappaport, M.D., Corona, N. Y.

ANSWER.—It is, of course, difficult to make a dermatologic diagnosis without the opportunity of seeing the patient, but as a general rule any recurrent eczema of the nipple should be looked on with suspicion and the possibility of Paget's disease considered. This does not mean that every eczema of the nipple is Paget's disease; however, if an eczematoid-like eruption about the nipple of a girl aged 17 does not respond to local applications or if there is a tendency for skin lesions to involute and recur repeatedly, a biopsy should be considered.

The essential lesion of early Paget's disease of the nipple is the atrophy of the nipple itself, a significant clinical finding. X-ray therapy should be avoided until a definite diagnosis is made. It might well be that the secondary infection present in the breasts last summer was made possible by the presence of the dermatosis.

Paget's disease of the nipple may manifest itself primarily as an intraductal carcinoma or it may start as a squamous cell epithelioma in situ of the nipple with secondary involvement of the breast tissue.

CARE OF PREMATURE INFANTS

To the Editor:—What is the chief cause of death of premature infants? Should vitamin K and Ringer's solution be used routinely? Does vitamin K affect the vessel or just the coagulation of the blood?

Homer D. Hoskins, M.D., Oceanside, Calif.

ANSWER.—While immaturity is the most frequent cause of death among premature infants, intracranial hemorrhage ranks second as the most common pathologic complication. In one premature station, vitamin K by hypodermic administration is now given to all premature infants. In most instances one administration, given as early as possible in the amount of 2 mg., is the usual procedure. The effect of vitamin K is dependent on its effect on coagulation of the blood. Isotonic solution of sodium chloride or isotonic solution of three chlorides is administered subcutaneously in amounts ranging from 8 to 30 cc. or more two or more times daily to infants who cannot be fed a sufficient amount of fluids by mouth. The administration of oxygen, preferably in a closed chamber, is the routine procedure in the care of all small premature infants. The larger ones are left in the chamber for one day; the smaller infants may require one or more weeks. The oxygen content in most instances averages about 40 per cent, double that of atmospheric oxygen, which is 20 per cent. The infant's temperature should be maintained above 96 F. by supplying external heat.

CANCER HEREDITY IN MICE

To the Editor:—I understand that in mice hereditary cancer can be bred in succeeding generations. Can you tell me whether any one has ever tried to implant the cancer of the mature mouse into the young offspring before the latter becomes of cancer age and thereby perhaps build up cytolysins or other antibodies that might inhibit the growth of the cancer when the mouse does become of age?

M.D., Pennsylvania.

ANSWER.—Mice can be bred in such pure strains that nearly all develop cancer of some specific type. A number of experiments have been done in which the cancer of the mature mouse has been implanted in young animals before their cancer age was reached. Antibodies can be demonstrated to be developed, but they are weak and irregular. Furthermore, they appear to have little influence on the progression of cancer when it develops spontaneously. The recent work of J. J. Kidd at the Cornell University Medical College and of R. G. Green at the University of Minnesota bears on this point.

INTRAMUSCULAR AMINOPHYLLINE

To the Editor:—Many physicians avoid the use of aminophylline 7½ grains (0.5 Gm.) intramuscularly because of the pain involved. This medication is a valuable addition to the asthmatic drug armamentarium. The simultaneous injection of equal parts of procaine hydrochloride 1 or 2 per cent in each of the deltoid areas of the arms causes little discomfort and will bring about an aminophylline effect in twenty to thirty minutes.

Robert R. Schwartz, M.D., Bronx, N. Y.

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American Journal of Physiology Baltimore
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American Journal of Public Health New York
American Journal of Roentgenol and Radium Therapy. Springfield. Ill.
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American Journal of Tropical Medicine Baltimore.
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American Review of Tuberculosis New York.
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Annales pædiatrici, Basel
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Annals of the Rheumatic Diseases London.
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*Archives of Dermatology and Syphilology. A. M. A, Chicago.
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*Archives of Internal Medicine A. M A, Chicago
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*Archives of Neurology and Psychiatry. A M A, Chicago.
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Arizona Medicine Phoenix
Australian and New Zealand Journal of Surgery Sydney.
Blood New York
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Psychiatric Quarterly Utica, N. Y.
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Rhode Island Medical Journal. Providence.
Rocky Mountain Medical Journal. Denver.
Schweizerische medizinische Wochenschrift Basel
Schweizerische Zeitschrift für Tuberkulose. Basel.
Semana médica. Buenos Aires.
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Sezonismo. Lisbon.
South African Medical Journal. Cape Town.
Southern Medical Journal. Birmingham, Ala.
Surgery. St. Louis.
Surgery, Gynecology and Obstetrics. Chicago.
Texas State Journal of Medicine Fort Worth.
Transactions of the Royal Society of Tropical Medicine and Hygiene. London.
Tubercle. London.
United States Naval Medical Bulletin. Washington, D. C.
Virginia Medical Monthly. Richmond.
Vrachebnoe delo. Kharkov
Western Journal of Surgery Obstetrics and Gynecology. Portland, Ore.
West Virginia Medical Journal. Charleston.
Wiener medizinische Wochenschrift. Vienna.
Wisconsin Medical Journal. Madison.
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Acad.—Academy
Am.—American
A.—Association
Coll.—College
Commn.—Commission
Comm.—Committee
Conf.—Conference
Cong.—Congress
Dist.—District
Div.—Division
Found.—Foundation
Hosp.—Hospital
Indust.—Industrial
Inst.—Institute
Internat.—International
M.—Medical
Med.—Medicine
Nat.—National
Pharm.—Pharmaceutical
Phys.—Physicians
Soc.—Society
Surg.—Surgery
Surgs.—Surgeons
S.—Surgical

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